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THE BATHS OF RHENISH GERMANY

BY

EDWIN LEE

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BATHS

OF

RHENISH GERMANY.

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MEDICAL SOCIETY OF LONDON

THE

BATHS

OF

RHENISH GERMANY;

WITH

NOTICES OF THE ADJACENT TOWNS.

BY

EDWIN LEE,

CORRESPONDING AND HONORARY MEMBER OF THE IMPERIAL MEDICAL ACADEMY OF VIENNA; THE ROYAL ACADEMY OF MEDICINE OF NAPLES; THE MEDICAL ASSOCIATION OF PRUSSIA; THE SOCIETIES OF PARIS, BERLIN, LEIPZIC, FLORENCE, &c.

"Balneum in plerisque morbis confert."—HIPPOCRATES.

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PREFACE.

So many more persons wish for an account of the Baths near home than are directly interested in those of the interior of Germany, and in the general remarks contained in my larger work, that instead of producing a fresh edition, I have deemed it more advisable for the present—in accordance with the opinion of the foreign booksellers—to publish this small volume for the accommodation of visitors to the Rhine, as well as of those of the profession, who may desire information respecting the most valuable of the mineral springs of this district. The notices of the neighbouring towns are intended to particularize their leading features, without entering into guide-book details.*

In all that relates to the remedial application of the waters, I have found but little requiring alte-

* In Bradshaw's Monthly Guide will be found an enumeration of the principal objects of interest in the continental towns; the chief hotels, &c.

ration; the general accuracy of the "Baths of Germany" having been admitted by the most competent local authorities, and confirmed by my own more recent observation. The few remaining copies of the last edition—as also of my "Practical Observations on Mineral Waters and Baths"—in which the therapeutic adaptation of these agents, their history, &c. are fully considered, are now, in consequence of the appearance of the present work, re-issued at a reduced price.

London, June, 1830.

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N.B. Those waters marked * are thermal; the others are cold.

THE

BATHS

OF

RHENISH GERMANY.

The increased facilities of communication of late years, have rendered the countries bordering upon the Rhine so easy of access, that the journey is now attended with very little more inconvenience than would be one to any distant part of Great Britain. Passports and custom-houses still exist; but in general, their formalities do not occasion much trouble to the traveller—neither is there any difficulty as regards the language, English being spoken by waiters at hotels, on board the steamers, and by most of those with whom tourists have to do. Some who do not mind a long sea voyage, and the ascent of the most uninteresting part, of the river, go from London by Rotterdam which (especially if tickets be taken for out and home) is somewhat cheaper. The majority, however, prefer the Antwerp, Ostend, or Calais passage.

By the former of these routes, there is no more sea than to Ostend: so much of the voyage being taken up by the navigation of the Scheldt. On returning, many prefer embarking at Antwerp, as the hour is always about noon, there being no occasion to wait for the tide; and after passing the night at sea, the vessel arrives in the Thames early in the morning. The passage from London to Ostend takes about twelve hours; from Dover, between four and five. Those, however, to whom the longer voyage is objectionable, will prefer crossing from Dover to Calais (an hour and half); thence by St. Omer and Lille into Belgium. None of these towns offer any inducement for travellers to delay their departure. At Antwerp, three or four hours may be agreeably passed; the city has an antique and somewhat sombre appearance, the houses being built in the old Flemish style, with gable ends fronting the street. At several corners, the figure of the Virgin and infant Jesus, may be seen as in Italian towns. The quays along the Scheldt are broad and handsome. The principal object of interest is the cathedral, one of the finest specimens of Gothic architecture extant. In the interior, the large picture of the Descent from the Cross, a *chef d'œuvre* of Rubens, will immediately attract attention. The Elevation of the Cross, by the same artist, is inferior to the former. From the summit of the building, an extensive panorama is displayed of the city, the course of the Scheldt, Brussels, Ghent, and other

towns. The citadel and the position occupied by the French during the siege some years ago, are best seen from this point. The museum contains but few superior pictures. About an hour is required by railroad to reach Brussels (passing by Malines, which is the central point, where the various lines converge). The country, as is the greater part of Belgium, is level and fertile, being intersected by canals. From Ostend, about five hours are required to reach Brussels; from Lille, about six hours. The whole distance from Ostend to the Rhine, at Cologne, is performed in thirteen hours.*

Ostend is but a dull place, though generally full of visitors in the sea-bathing season—which, with occasional regattas and other fêtes, impart to it some degree of animation. The environs are devoid of interest. Bruges offers somewhat more resource, having a population of 40,000 inhabitants. Two or three of the churches are worth visiting; but altogether the town has a dull aspect, and the only inducement to select it for a residence is, the cheapness of living—there are about 200 resident English.

Ghent is a handsome town, with a population of 90,000 persons; but is not a place adapted for the

* There is steam communication between Antwerp, and Rotterdam, and Hull; the voyage is about twenty-six hours from either of these ports to Hull. The journey between London and Cologne may now be performed in twenty hours; by leaving at half-past eight P.M., by rail, the traveller can arrive at Cologne at five the next day.

prolonged sojourn of English families; though a day or two may be advantageously passed by the tourist in viewing its churches, collection of pictures, &c. The theatre is one of the finest in Europe.

Since the completion of the railroad from Lille, Calais has in part superseded Ostend as regards the embarkation of the majority of Belgian and German tourists. The railroad station is close to the quay; and there is nothing in the town or environs to occasion any delay. St. Omer is a strongly fortified town, with about 20,000 inhabitants; the streets have a triste and deserted appearance—the ruins of the church of St. Bertin is the only object of interest. A few English families have taken up their residence at St. Omer, on account of the cheapness of living. Lille being a commercial town, with a population of 60,000 inhabitants, presents more animation—being the frontier of France, it is strongly fortified. The mediæval aspect of the principal Place, and Hotel de Ville, will impress the stranger arriving from England. Those who have already visited Brussels, may proceed by Douai, Valenciennes, and Charleroi, to Namur, and thence to Liege, by the banks of the Meuse, or if preferred, by the steamer which plies between these towns. Two hours are required to reach Lille from Calais, and twelve from Lille to Cologne.

Brussels presents the stirring and animated aspect of a large capital; extensive suburbs,

and spacious boulevards embellished with ranges of handsome houses encircle the city; the principal streets are wide, regularly built, and lined with showy shops; and in the upper part, the Place and Rue Royale in particular, have a handsome and courtly appearance, forming, together with the park, a splendid *coup d'œil*. Though small in extent, the park is pleasantly laid out, and its walks are well sheltered by lofty trees. At each end stands a royal palace, which, seen through the vista of trees, produces a good effect. The Palace of the Prince of Orange contains richly decorated apartments, and beautifully inlaid floors, and is generally visited by strangers. The most interesting public edifices in the lower part of the town, are the Church of St. Gudule, an ancient Gothic structure (somewhat resembling exteriorly Notre Dame, at Paris), and the Hotel de Ville, likewise a fine specimen of Gothic architecture. Its extensive façade adorned with finely sculptured fretwork, and its lofty spire, are strikingly beautiful. Brussels presents most of the resources of capital cities, and may in many respects be likened to Paris on a small scale. The Belgians resemble the French in several points of their character, as might be expected from their speaking the same language, and the contiguity of the countries. They are, however, more religious—and the clergy have considerable influence, both over domestic life and in public matters. There is always a large colony of English at Brussels; the number having been lately increased, on account of the

comparative exemption of Belgium from the political disturbances which have agitated the greater part of Europe. There is usually a good deal of society in the winter; the climate, at this season, is objectionable; house-rent and living are considerably cheaper than at Paris.

From Brussels to Liege by Malines, there is but little to interest except the beautiful Town Hall at Louvain. The route by Namur is more interesting. The hamlet of Waterloo, and the battle field are on the high road. This town is strongly fortified by a citadel and extensive works along the heights, which overlook the river, and by ramparts and a double fosse enclosing it on the land side. The streets are narrow and dirty; the population amounts to about 20,000 persons. An agreeable excursion through beautiful scenery may be made up the river to Dinant.

Beyond Namur, the valley of the Meuse is full of pastoral beauty and richness. The river flows placidly through scenery diversified by corn and meadow land, among which cottages and neat farms are thickly scattered—woody or cultivated hills sloping down to the water's edge, and here and there precipitous sandstone rocks, the greyish hue of which contrasts pleasingly with the surrounding verdure. At Huy, a neat stone bridge crosses the river; and together with the road is commanded by a fort which crowns an eminence, and was built by the allies in 1815.

Liege lies between steep hills on the left bank of the Meuse, and exhibits all the bustle of a large

manufacturing and commercial town. It has an aspect of great antiquity; the houses being old, most of the streets irregularly built, narrow and dirty. Between Liege and Aix-la-Chapelle, a beautifully, undulating, and richly wooded country is traversed, presenting a series of delightful prospects. From the irregular nature of the ground, and the numerous tunnels required, this portion of the railroad is estimated to have cost as much as the whole of the remainder to Antwerp. Not far from Liege is the station of

CHAUDE FONTAINE.

This pretty spot lies between Spa and Liege, two leagues distant from the latter place.

The carriage road from Spa is carried through valleys rich in pasture-land, corn, and fruit-trees, between verdant hills, and following the windings of the little river Vesdre, on the left bank of which, and in the most beautiful part of the valley, stands the village, consisting of the Hôtel des Bains, and about twenty houses, in several of which visitors can be accommodated. There are also the large Hôtel de Liège, and the smaller one d'Angleterre. The road along the bank of the river, being skirted with avenues of poplar and other trees, affords a delightful shade at all hours of the day; while on the hills behind the village, and on the opposite side of the river, pleasant and shady paths, easy of

ascent, have been constructed, presenting from various points views of pastoral beauty and fertility rarely to be surpassed.

The spring rises into a well, thirty feet deep, which, when uncovered, emits a considerable quantity of vapour, and from which the water is raised by means of a machine into a reservoir, whence it is conducted into the different *baignoires*, the baths being taken at the natural temperature of the water; and as the supply is abundant, each bather may allow the water to continue flowing during the period he may remain in the bath. Like those of Schlangenbad, Wildbad, and others of the same class, the water is tasteless, has a soft and unctuous feel, and is so beautifully clear, that the smallest object may be perceived at the bottom of the bath; the sensation, while bathing, and subsequently, is equally pleasant and refreshing as at other springs of the same nature.

The bathing establishment adjoins the Hôtel des Bains. The bathing cabinets are large, clean, and convenient, several of them containing two *baignoires*, sunk below the level of the ground, each about seven or eight feet long, and four or five deep. There are no public basins for bathing in common, as at Wildbad. The price of each bath is also lower than at most other watering-places, being but fifteen sous. Both the accommodations and the baths have been latterly much improved.

This water has been employed for bathing up-

wards of two hundred years; but, in 1716, came into more general use, as a means for the treatment of disease, at which period also the baths were put into better order. It has been analysed by M. Lafontaine, a chemist of Liège, and contains a small quantity of carbonic acid, with about two and half grains of saline substance—principally muriate of soda and carbonate of lime—to the pint. Its temperature is between 26^0 and 27^0 Reaumur, being somewhat lower than that of Wildbad A course of these baths may be recommended in several cases where a mildly sedative effect is required. In some cases, the internal use of the Spa water may be advantageously combined with the bathing. A little beyond Chaude Fontaine is Pepinstère station, where a pleasant drive of an hour, brings the tourist to

SPA.

This town is situated one thousand feet above the level of the sea, is an agreeable valley of the Ardennes, at the foot of and between two projecting masses of a steep hill forming an amphitheatre, by which the greater part of it is sheltered from the north and east. It is ten leagues from Aix-la-Chapelle, about an equal distance from Liège, and three leagues from Chaude Fontaine. The walks and rides in the environs, and about the hills, are beautiful and varied; the most usual point of re-

union is the *promenade de sept heures*, which, however, of late years, has presented rather a deserted appearance; the tide of fashion having flowed in other directions; and since the Belgian revolution the place has been abandoned by its Dutch visitors, who used to resort thither in large numbers Last year Spa was very full, owing to the disturbed state of France and Germany. Spa, notwithstanding, does not lack resources for amusement. There are a theatre, handsome public rooms for balls, concerts, and games of hazard, large sums being frequently staked; and ponies for excursions into the country. It is, moreover, not expensive as a summer residence, and is still a good deal frequented by the English who are in the habit of wintering at Brussels. There is a resident English physician.

The country about Spa abounds in chalybeate springs, and oxide of iron is occasionally visible on the rocks. The principal spring, the Pouhon, is the only one which rises in the town. The water has the usual characteristics of springs of this kind, and tastes more astringent than many others, from the comparatively small quantity of salts. Exposed to the action of the air, the iron is soon deposited in the form of a reddish brown sediment. The temperature of the water is 80° R.

An avenue of horse-chestnut-trees leads from Spa to the Geronstère spring, two miles distant, and surrounded with pleasure-grounds. The taste of the water is less astringent than that of the

Pouhon, and is slightly sulphurous. It is generally recommended in cases where the action of the Pouhon would be too heating, the quantity of iron being comparatively small in the Geronstère. The Sauvenière and the Groesbeek springs are also at some distance from the town, in the woods; the former contains more iron and gas than the Geronstère. About a mile from the latter are the two Tonnelets, between which springs there is a considerable difference in composition, one being very rich in carbonic acid, while the other contains very little of this gas, but has more iron, and is chiefly used for baths, for which purpose there is a low dilapidated-looking building on the spot. Carbonic acid is in such abundance in the neighbourhood of these springs, that it is frequently perceived issuing from the clefts of the rocks. Dr Ash observed, that the quantity was augmented in certain states of the atmosphere, both in the springs themselves and in the adjacent caverns, particularly during the prevalence of north winds.

The Spa waters belong to the class of the more pure chalybeates, as they contain but a small quantity of saline substance, in proportion to the amount of iron. Compared with the Schwalbach springs their action is more heating and astringent; their predominant salt being carbonate of lime. They may be considered as generally applicable to the same kind of cases which I have to enumerate under that head; though particular circumstances would form an indication for preferring sometimes

the one, sometimes the other springs. Where a patient has no particular predilection for the locality of Spa, I should, in most cases, prefer Schwalbach, as I consider that in the Weinbrunnen are combined, in the fittest proportion, the iron with the saline and gaseous constituents, and this spring disagrees with very few persons to whose cases chalybeates are adapted The baths also, which cannot be better arranged than at Schwalbach, offer an additional, and in some instances a principal means of deriving advantage from the springs; the supply of water being abundant, persons may bathe in the one or other kind, according as the circumstances may require; whereas, at Spa, the only spring in the town, the Pouhon, has not a very abundant supply of water for bathing; a bath-house has, however, lately been erected near it, though the baths are not so much in request.

Dr. Kreysig says of the Spa waters, that in some cases of morbid sensibility of the stomach and bowels, they are better borne than some others of the same class, and also (as might *a priori* be expected from their composition), where there is a disposition to abundant discharges from the alimentary canal, (diarrhæa,) or from the uterine system. With regard to baths of chalybeate waters, the doctor justly observes, "I may add with respect to chalybeate waters, that tepid baths prepared with them ought never to be neglected in combination with their internal use. These baths are of very great efficacy; they not only second the action of

the water taken internally, but they frequently alone suffice to make a perfect cure. It frequently happens that delicate patients cannot support the internal use of the water, or only a small quantity of it; it is then best to abstain from its internal administration and to pursue the treatment by baths alone."

The analysis (by Dr. Jones) of the contents of a gallon of water from the different springs was made in 1816; one was also published in 1830 by M. Plateau, which differs somewhat from Dr. Jones. The most recent work on these waters is that of Dr. Lezaack. Dr. Cutler has likewise published a *brochure* on the waters.

Some of those who are not pressed for time would prefer, instead of following the beaten railroad track to Cologne, proceeding across the country from Spa to the interesting city of Treves, and after viewing its antiquities, descending the Moselle to join the Rhine at Coblentz. The scenery along the Moselle is pleasing, and in some parts beautiful. The steamer descends to Coblentz in a day, requiring two days for the ascent of the stream. By this route (with the exception of the part about the Seven Hills, the ruins of Drachenfels and Rolandseck,) but little of the scenic beauties of the Rhine is lost. The great majority of tourists will, however, always prefer the railroad, returning to Pepinstère, and thence through Verviers, the frontier town of Belgium, beautifully situate, and celebrated for its cloth manufactory, to

AIX-LA-CHAPELLE.

Germany, which is so rich in other kinds of mineral springs, possesses but few sulphurous ones; those of Aix-la-Chapelle, Warmbrunn, Baden, near Vienna, and Wielbach, being the principal. The springs of Aix-la-Chapelle are of very high antiquity, and still retain the celebrity which they have for ages enjoyed To them the town owes its name, the German term Aachen being a derivation from the Latin, Aquæ. It is pleasantly situate at the foot of a chain of hills, in a well-wooded and fruitful valley, enclosed with gentle risings of ground, clothed with verdure. The gates and walls were demolished at the peace, and a boulevard, planted with lime and chestnut-trees, on the site of the ramparts, now forms an agreeable promenade. The population amounts to about forty thousand. The most remarkable public edifices are, the Hotel-de-Ville, and the Cathedral or Chapelle, built by Charlemagne, where his remains till lately reposed. The hotels and bathing houses are numerous—handsomely fitted up and provided with requisite apparatus for the use of the waters, whether as baths, douches, or vapour-baths. Of late years, new streets have been formed, to accommodate the increased number of visitors. The theatre is supplied with a good corps dramatique, and the Redoute, a building for restauration, even-

ing assemblies, and games of hazard, is open daily during the season. Play is sometimes high, and is under the superintendence of the government—an employé being always in attendance to enforce the regulations, and to prevent any of the inhabitants risking their money. But few visitors remain later than September, after which month the coolness and variableness of the weather would tend to counteract the action of the waters.

The environs abound in pleasant walks and drives, which add to the attraction of Aix as a summer residence. The favourite resort of the inhabitants is to Louisberg, a hill close to the town, of which it commands a good view, as well as of the small town of Borcette, and the richly-varied scenery of the surrounding country.

Among the hotels, the Quatre Saisons, Grand Monarque, Neullens, Bellevue, and Imperial, are the most frequented. The chief point of reunion for drinkers and idlers in the morning, is at the Fontaine Elise and the adjacent promenade; drinkers descend to the fountain, which is about twenty feet below the surface of the ground, by a stone staircase, their glasses being filled by females who are thus constantly employed at drinking hours. A portico in front of the spring enables invalids to walk about in wet weather in the intervals of their glasses of water. There are at one extremity apartments for refreshments, and at the other an excellent musical band plays in the morning and evening. This fountain is supplied from

the *Source* de l'Empereur, the water being conveyed through pipes underground.

These springs have been in great repute ever since the time of Charlemagne, who used frequently to hold his levees in the bath. Six springs, divided into the superior and inferior, rise within the town; their proximity is sufficiently evidenced by the smell peculiar to sulphuretted hydrogen. When drawn from the fountain, the water is clear and colourless; but on exposure to the air it soon loses its gaseous parts, with its sulphury smell and taste, and deposits a whitish sediment. The three superior springs rise near to each other, are hotter, and abound more in sulphuretted gas than the inferior, which rise at a little distance in a lower quarter of the town. The Source de l'Empereur, which is the hottest and most sulphurous, is the most employed; its temperature is 135° Fahrenheit; it supplies the bain neuf, the bain de l'Empereur, and the bain de la reine d'Hongrie.

The Source St. Quirin, is another of the superior springs, which rises in the bathing-house of the same name; its temperature is 115°. The temperature of the inferior springs does not exceed 112°; they are termed the Sources de la Rose, St. Cornelius, and St. Charles. Some bathing-houses and a drinking fountain are supplied from these springs, which are less exciting than the superior ones, and can frequently be employed in cases where the latter would disagree. Aix-la-Chapelle also posseses some chalybeate springs, to the use

of which a bathing-house is appropriated. The iron in these springs is not very intimately combined with the water, owing to the small quantity of gas—hence they are less adapted for drinking than for baths.

In addition to sulphuretted hydrogen gas, the water of Aix-la-Chapelle contains carbonic acid gas, muriate, carbonate, sulphate, and phosphate of soda, with a small proportion of lime, magnesia, and strontian: used in the form of bath, its action is extremely penetrating and stimulating, producing diaphoresis and relaxation of the system. It is liable to cause determination of blood to the head and lungs in persons who are thereto predisposed, and is consequently contra-indicated in cases when this tendency exists, as also in individuals of full habit of body, in those subject to active hæmorrhage, or to great irritability of the vascular system, and in cases of disease of the heart or other important viscera. It is better suited to cases in which torpor or atony is the prevailing character, and to persons of lymphatic constitution. Taken internally, it is alterative and generally aperient, affecting more especially the lower intestines; it also acts in particular cases upon the mucous membranes of the air-passages and urinary organs; on the liver, promoting the abdominal venous circulation; on the absorbent vessels, and glands, and on the skin. By combining the internal use of the water with baths, the inactivity of the bowels sometimes induced by bathing is obviated. Fric-

tion of the surface by male and female rubbers, is customary, and promotes the efficiency of the douches and baths. A course of these waters is serviceable in most cases where the object is to act gradually, though powerfully, upon the skin, mucuous membranes, and abdominal viscera, especially the liver; in some gouty and rheumatic cases, with contraction or loss of power in the limbs, and also in some paralytic cases, the springs of Aix-la-Chapelle might claim a preference over others, but it is more especially in cases of intestinal and hepatic inactivity, piles, hypochondriasis, disordered health from residence in unhealthy climes, abuse of mercury, or other causes; in chronic bronchial affections, with increased secretion, especially in old persons,—that these waters would be calculated to benefit. Obstinate chronic diseases of the skin, without inflammatory tendency, as scabies, impetigo, psoriasis, lepra, and prurigo—as also those of a syphilitic origin, would be more likely to be relieved by these springs than by others, when not counter-indicated by individual peculiarities. Hufeland said with reference to the waters of Aix, in syphilitic complaints, "It is well known how great is the number of those unfortunate people in whom, from neglect or from an improper or careless mercurial treatment, the disease has attained its worst form, and has become almost rivetted in the constitution—and how obstinately its consequences resist the ordinary remedies. Ophthalmia, ulcers, especially in the throat—sup-

purated and indurating glands, caries, cutaneous diseases, nervous affections, &c., are the secondary symptoms which present themselves to the practitioner who might vainly attempt to cure them by mercury; they would even become worse, and even the usual substitutes of this medicine would prove of no avail. In these cases, the springs of Aix are of the highest efficacy, and many are the persons who owe their recovery to them. These waters are also no less effectual in removing the consequences of the original disease, than in neutralising those of the mercurial poison."

Old ulcers, and fistulous sores, contractions of the limbs from injury, are benefited by waters of this class, which also frequently determine towards the surface musket-balls or other foreign substances lodged in the body. In some cases of enlargement of the glands, with general atony of the system, much benefit might likewise be anticipated, from these or other warm sulphurous waters.

BORCETTE.

Borcette lies within a mile of Aix-la-Chapelle, and contains a population of six thousand. It possesses several hot-springs, which, like those of Aix, are divided into superior and inferior. The superior are not sulphurous, but belong to the

class of saline thermal springs. They are impregnated with carbonic acid gas and azote; the quantity of these gases being, according to Monheim, twenty-seven cubic inches to the pint of water from the Kochbrunnen or boiling spring, which is nearly as hot as its namesake at Wiesbaden, the temperature being 150. This spring likewise contains a large quantity of muriate of soda, and small quantities of carbonate of soda and other salts. The other superior springs, though less hot, do not materially differ in composition from the boiling spring. Five bathing-houses are supplied by these springs.

The inferior or sulphurous springs are not unlike those of Aix-la-Chapelle, though less rich in sulphur. A drinking spring (Trinkbrunnen) rises at the extremity of the public road from Aix, and is not unfrequently used by the visitors from the latter town. A second spring supplies the principal bathing-house, La Rose; the third is termed the Pocken-brunnen, from its supposed efficacy in the removal of some cutaneous affections; the baths are well supplied with douching apparatus. As the waters of Borcette are less heating than those of Aix, they may be used in some cases where the latter would not be so admissible, and are not unfrequently employed preparatory to the stronger springs. The presence of saline and sulphurous waters in the same town is highly advantageous to many patients who drink the one, while employing the baths of the other kind.

Nearly two hours through an uninteresting country are required to reach Cologne, the chief city of Rhenish Prussia, which contains a large garrison, and 50,000 inhabitants. A bridge of boats connects the town with the opposite bank of the river, which is strongly fortified. It is in contemplation to erect a more permanent kind of bridge, by which the trains from the north of Germany may be conveyed into the town. Cologne has only one large square ; the streets are narrow, irregular, and dirty, presenting altogether a sombre appearance. The cathedral, the chief object worth visiting, built in the old Gothic style, seen from a distance appears like two separate bnildings. It is, however, now in progress towards completion, having been unfinished for centuries. Rubens was a native of this town ; his portrait and an inscription on the wall indicate the house where he was born. The crucifixion of St. Peter, a *chef d'œuvre* of this artist, is exhibited in one of the churches.

Steamers ascend and descend the river several times a day. There is also railroad communication with Bonn, and with Dusseldorf, and thence to Hanover, and all parts of Northern Germany. On ascending the Rhine, many, instead of embarking at Cologne, prefer to proceed and sleep at Bonn, in order to be taken up by the boat in the morning, the banks of the river between these towns being void of interest. On descending, however, no advantage is gained by landing at Bonn, unless with the view of seeing the town, which is inclosed

within walls, with narrow and badly paved streets, and offers nothing of sufficient interest to delay the traveller. The university enjoys a high reputation, and was founded in 1818, by the late king, on the model of that of Berlin. The students are, for the most part orderly and diligent; their number is 1000. A fine avenue of trees leads to the castle of Popplesdorf, where there is a botanical garden. Between Bonn and Coblentz the banks of the river are fertile, and in some parts thickly wooded; but few rocky eminences or ruins are seen after passing Godesberg, and the Seven Mountains, the highest of which is crowned by the Drachenfels, which immediately overlooks the river, and is seen to great advantage from the steam-boat or on the opposite bank. A little beyond is the island of Nonenwerth, with its extensive building, formerly the convent, but of late transformed into an hotel. On the right bank is Rolandseck, a fragment of the ruins standing conspicuously out on the rocky point. There is good accommodation at the hotel, as at all the small towns on the river.

Coblentz is a neat town at the point of union of the Moselle and the Rhine, and is strongly fortified on every side. It contains two or three good streets, a spacious Place, and about 12,000 inhabitants. A bridge of boats cross the Rhine, connecting the town with the castle of Ehrenbreitstein, whose precipitous rock, bristling with defences down to the water's edge, frowns defiance around, and is now considered to be impregnable.

The stone bridge across the Moselle is of great antiquity.

The drive to Ems through a pleasant country, and along the right bank of the placid Lahn, requires about an hour and a half. This river debouches into the Rhine at Lahneck, where there is a fine ruin on the hill: the castle of Stolzenfels being almost immediately opposite. Further on is Marksburg, which, perched on one of the highest points, is seen from a considerable distance. This is the only one of these fortresses which escaped destruction, and is in a habitable condition, and is used as a state prison for the Duchy of Nassau, which extends from Lahneck to beyond Biberich, on this side of the river—the opposite bank being a portion of the Prussian territories.

St. Goar and Boppart are remarkable for the beauty of their position; the river at these points being hemmed in by the mountains, so as to present the aspect of a lake. Rheinfels, which overlooks St. Goar, is the most extensive of the ruined fortresses, and was considered impregnable till it was taken by the French, by whom it was destroyed. It now presents a complete picture of desolation. At Boppart are two Water-cure establishments — Marienberg, one of the first in Germany, (of which I gave an account, before the practice was introduced into England,) formerly an extensive convent, standing on an elevation above the town, and a conspicuous object; and a smaller one on the river's bank, a mile distant.

Oberwesel (above which rises the castle of Schönberg) and Bacharach, are also remarkable for the beauty of their situation. Neat towns and villages succeed each other as the river serpentines rapidly between hills cut in terraces for the cultivation of the vine, and rocks crowned, ever and anon with castellated ruins, as far as Bingen; beyond which the character of the scenery forms a pleasing contrast to that of the narrower part of the river between this town and Coblentz. Opposite Bingen is Rudesheim, and a little beyond Geisenheim, where two of the most esteemed wines of the Rheingau are produced. The castle of Johannisberg, on its vine-covered hill, is likewise a prominent object in this part. Higher up is the ducal palace of Biberich, which looks well from the water. This is the landing-place for Wiesbaden. About twenty minutes more on the steamer suffices to reach Mayence.

Much gratification will be derived from ascending the beautiful valley of the Nahe, from Bingen to

KREUTZNACH.

The drive presents a continued succession of scenery of a high order of picturesque beauty; the river placidly winding through orchards, vineyards, or rich meadows, in which numerous cattle are grazing, is ever and anon narrowed by the approximating hills, cultivated and clothed with ver-

dure; or by steep rocks, whose dark and greyish masses form a strong contrast with the bright green of the valley, and the deeper hue of the brushwood which grows from their sides. The town of Kreutznach, containing eight thousand inhabitants, lies in one of the most beautiful parts of the valley, is built on the left bank of the river, and connected by a stone bridge with the new part on the opposite bank. The hill of Kautzenberg rises behind the town: and from the ruined castle on its summit an extensive and beautiful view up and down the valley may be obtained. The accommodations at the hotels, though not first-rate, are much improved; some of the visitors, however, reside at the bathing-houses, near the salt-works, about a mile and a half higher up the valley. The air of Kreutznach is salubrious. The inhabitants are for the most part cheerful and obliging; provisions are plentiful, the wines good, the living reasonable; and though as a watering-place, Kreutznach has but recently come into notice, yet, perhaps, at no other bath has the increase of visitors been so rapid.

The walk along the banks of the Nahe to the Salines or salt springs is highly interesting; here, as at Kissingen, there are immense wooden sheds about fifty feet high, open to the action of the air, and filled with thorn-bushes. The water is pumped up by machinery into troughs, running the whole length of the top of the shed, and as it passes along, falls through the bushes; so that from the

evaporation which takes place, when it is received in the reservoirs at the bottom, it has acquired an increase of between seventeen and twenty-four per cent. of salt. The brine is then conveyed to large iron vats, and boiled till the salt separates and falls to the bottom.

The scenery beyond the Salines is of a singularly bold and romantic character. Bare rocks from three to five hundred feet in height, rise perpendicularly from the river, which winding round their base is diverted from its direct course so as almost to form a circle. The most remarkable and loftiest of these rocks, termed Rheingrafenstein, has a ruined castle on its summit, commanding a magnificent view of the surrounding country. The fine ruin of Eberburg stands on an elevated point, and forms also a striking feature in the scene. At some distance further on, in the direction of Sobernheim, are some quicksilver mines, generally visited by strangers.

Some of the springs of Kreutnach rise on the island, and in the river near the town. The principal are the Elisen and Carshaller brunnens; the basin of the former being placed at the extremity of the promenade on the island, between two flights of stone steps which lead up to a platform overlooking the river. The baths are near the springs. A new bath-house was erected a few years ago, as were also a large Cursaal, and convenient lodging-houses.

The water is clear, and emits a few gas bubbles.

It has a saltish, rather astringent and disagreeable taste, and on standing deposits a brownish-coloured sediment, consisting of carbonate of lime and iron, which is sometimes used as a local application to stiffness of joints, strumous swellings, etc. The temperature of the springs differs, that of the Elisenbrunnen being 7°, the Carshaller 13°; the former contains the largest quantity of gas, of which the latter has very little, as will be seen by the table of analysis.

The other springs, principally used for bathing, are the Thedorshaller, and the Munster-am-Stein, at the salines. It is customary in some cases to add to each bath some of the strongly impregnated lees remaining after the evaporation of the water, which has the consistence of oil. The following is the amount of grains of mineralising substance contained in a pint of the *Mutterlauge* of the Theodorshallerquelle.

Muriate of potass	17·30
" " soda	60·34
" " magnesia . . .	38·44
" " lime	15·77
Bromate of potass	92·80
" " soda	154·10
" " lime	338·72
Earthy matter and iron . .	85·66
Others salts with traces of iodine	216·15

The Mutterlauge of Munster-am-Stein spring, is said to contain a larger proportion of iodine.

Hence, as may be supposed, the Kreutznach baths are exceedingly stimulating and exciting, requiring more than ordinary precautions in their administration, and causing a powerful reaction and irritation of the skin, not unfrequently followed by eruptions of a papular, pustular, or furuncular nature. Two kinds of eruption are particularly mentioned by Dr. Prieger: one kind comes on after a few baths, in bluish spots as large as a Prussian dollar, which, after a short time, assume a yellowish hue, and disappear: the other occurs chiefly about the joints and parts covered with hair, in the form of small pustules with a dark red base, usually comes on after the twentieth bath, and lasts ten or twelve days; but having once disappeared, does not return, even if the baths be continued. This kind, however, seldom appears, except in diseases of the skin or lymphatic glands, and is of a critical nature, being usually the precursor of a favourable change.*

The Kreutznach springs differ from others of the same class, in containing a larger quantity of bromine and iodine, which are known to be so efficacious in the treatment of glandular diseases; and though the amount of these substances in the quantity of water taken during a course would be too small to have any positive effect, yet it materially assists when in combination with the saline ingredients; and when the Mutterlauge is used in the baths, the quantity absorbed would not be incon-

* Kreutznach und seine Brom-und Iode-haltigen Heilquellen.

siderable. Hence no other mineral spring has acquired in so short a time a special reputation in scrofulous cases, and in the tendency to scrofula in young subjects: the water internally taken being alterative and laxative, while the baths act powerfully upon the absorbent system, diminishing glandular enlargements and other swellings. Where, however, there is a disposition to inflammatory action, these springs are not so applicable as others. Dr. Vetter, in his recently published standard work, says, "The cases in which Kreutznach is less to be preferred to other springs in the more erethetic and irritative forms of tubercular and glandular enlargement, with a tendency to the formation of coagulable albuminous products. In such cases, occurring in delicate and irritable subjects, though the action of saline springs cannot be denied, yet the alkaline springs, internally and externally employed, on account of their mildly solvent and penetrating operation, are much preferable." *

The waters of Kreutznach, like several others, are also calculated to be of service in a relaxed state of the mucous membranes of the air-passages, digestive organs, or reproductive apparatus, and in long-standing cutaneous diseases without inflammatory action, as psoriasis, some syphilitic eruptions, etc., though it is only after inquiring into the peculiarities in individual cases, that the practitioner can determine upon the kind of mineral spring to which the preference should be given.

* Handbuch der Heilquellenlehre. Berlin.

Half an hour's drive from Biberich, passing over a hill whence may be enjoyed a fine prospect of the Rhine, suffices to reach

WIESBADEN.

The Duchy of Nassau, though small, is extremely beautiful, comprising a great variety of scenery, while the fertility of its soil in many parts, its extensive forests, its mineral springs, and its vineyards producing some of the most esteemed kinds of wines, are never-failing sources of richness The most beautiful parts lie in the north, about Limburg, the banks of the Lahn, the Rheingau, and some localities of the Taunus mountains. The air is light and bracing; the labouring classes are sober and hard working. All are able to read and write, and though there exists great poverty, there is no absolute destitution. Begging is strictly prohibited.

Perhaps no part of the world contains within so small a space so many valuable and efficacious medicinal springs, differing in nature, as this Duchy. They lie for the most part at the foot of the Taunus range of hills, and are consequently but a short distance one from the other. Thus, within a drive of five or six hours, one may pass by the sulphur springs of Weilbach, the cold saline ones of Soden, the acidulous of Kronthal the hot saline of Wiesbaden, the warm of Schlangenbad, the chalybeate of Schwalbach, and the alkaline ones of

Ems; and there are many others in various parts of the Duchy, from some of which the water is largely exported, as Selters, Fachingen, Geilnau, etc. Of these places, Wiesbaden, both as being the capital, and as the oldest and most frequented, not only of the Nassau Baths, but probably of those in the rest of Germany, claims the chief notice.

The town has a neat, clean, and animated appearance, and is yearly increasing in size, by the construction of handsome streets and detached houses; its resident population (upwards of 12,000) being nearly double what it was twenty years ago, and will in all probability ere long be much more numerous, as Wiesbaden has of late attracted attention among strangers, as a not ineligible place for sojourning the winter. Placed in a valley with an open and beautiful country in the directions of the Rhine and the Maine; and bounded on the north and east by hills covered with apple, cherry, and walnut trees, behind which rises the Taunus range of mountains, it is effectually protected from the cold winds from these quarters. On account of its position, it is at times exceedingly hot and oppressive in the summer months, which circumstance, though generally favourable to those using the waters, as seconding their action, is disadvantageous to many persons in health, who however may generally avoid the feelings of langour and indisposition from this cause by taking exercise out of the valley, on the hills, where the air is mostly fresh and invigorating. The beauty of the country

and the numerous objects of interest in the neighbourhood, offer great inducements for making excursions; the roads being good, the drives varied, and the rising grounds presenting views of the country, the Rhine, with Mayence and other towns on its banks; the pedestrian also will derive much gratification from the variety of delightful walks in the environs; whether, leaving the avenues of acacias and plane trees of the promenades about the Cursaal, he continue to ascend the valley as far as the picturesque ruin of Sonnenberg, or proceed in an opposite direction from the town to the beautiful and verdant valleys Nerothal, Klarenthal, etc.; whether he stroll in the extensive Ducal garden at Biberich; or direct his steps towards the Taunus hills to enjoy more secluded walks in the woods behind the Geisberg, where the silence is unbroken, save by the singing of birds, or by the occasional passage of deer through the underwood,—or to ascend as far as the Platte in order to view the magnificent and extensive prospect from its roof. The numbers of holiday folks, who on stated days come from the country, or from Frankfort or Mayence, together with the constant arrival of fresh visitors disembarking from the Rhenish steamers, etc., tend to impart an air of animation to Wiesbaden, which cannot fail to have a beneficial influence on many invalids. By means of the railroad, the above-mentioned towns are now greatly approximated to Wiesbaden, which may be considered as a central point, and the increased facility of communication

with England (which may be reached in two days) is a great inducement to invalids to visit the Rhenish baths.

The preferable situation for a residence is the Wilhelmstrasse, a handsome row of houses half a mile in length, fronting the fine avenue of plane-trees, by which the street is sheltered from the sun during greater part of the morning. Near one end stands a large building, comprising the Museum of Antiquities, etc., open to the public on state days, and the public library, whence, by an introduction to the librarian, books may be obtained. At the other end of the street, and forming one side of a square, is the Curhaus der Vier Jahreszeiten, or Four Seasons, the principal hotel and bathing-house, where many persons remain during the whole time of their course of bathing. Here, as well as at some of the other hotels, there is a table d'hôte dinner at four o'clock. The Nassau hotel likewise forms part of the square, and on the opposite side stands the theatre, which is open throughout the year for the representation of dramas and operas; the company in both departments being much better than many persons would suppose, and performers of eminence frequently arrive during the season. Across the road lies a verdant meadow, bordered by avenues of lime-trees, and on either side a lofty colonnade for shops, terminating at the Cursaal or public rooms, which are, perhaps, the handsomest in

Germany. The principal saloon, with its numerous marble pillars, is particularly striking when lighted up on the occasion of the public balls, or when filled with from two to three hundred persons at dinner. Besides the public weekly ball, there are twice a week *réunions dansantes*, more exclusively for the visitors, which are usually preceded by a concert, and take place in one of the smaller rooms, while the *rouge et noir* and *roulette* tables are attended by a crowd in the adjoining rooms. On the opposite side of the building is the establishment of a restaurateur, where, besides the table d'hôte and private dinners, refreshments of all kinds may be obtained. Adjoining the Cursaal is a public reading-room, where the English and French papers are received.

The old part of the town presents nothing remarkable. The modern edifices most deserving attention, are the new Ducal palace, the interior of which is fitted up with great taste; the Ministerium, or public offices; and the Catholic Church, still in process of construction. The inhabitants are for the most part Protestants. The people throughout the duchy are industrious, and appear to be contented. Sunday is a gala day at Wiesbaden; the shops continue open, as does also the theatre, and numerous visitors arrive from Frankfort, Mayence, and other parts of the neighbourhood. On these occasions some hundreds of persons dine at the tables d'hôte of the Cursaal and

the principal hotels, viz. the Adler, Vier Jahreszeiten, Nassau, Rose, and Düringer's new hotel near the railroad.

As I do not enter into a lengthy description of places, but merely note the circumstances in which valetudinarians are most interested, I proceed at once to speak of the chief source of attraction to numbers who from different parts of the world resort to Wiesbaden, viz. its mineral springs and their efficacy. The springs principally employed are the Kochbrunnen, those of the Adler, the Vier Jahreszeiten, and the Schützenhof. The Kochbrunnen may be seen bubbling up and steaming, like an immense cauldron, in an open space adjoining the acacia avenue, which is thronged with drinkers in the morning till seven o'clock; an excellent band being in attendance. This spring supplies the hospital, the new bath-house, Englischen Hof, Römerbad, Rose, and other bathing houses in its vicinity; the three latter springs supply the baths of their respective hotels, which will be found the most convenient for bathing, the cabinets being more roomy, and the bagnoires larger and deeper, than in other houses, where there are merely boarded partitions, seven or eight feet high, between the baths, with scarcely room for more than a single chair in each. The douches are not so well managed in Wiesbaden, as in several other baths, particularly in France. Though there are two or three establishments that have the *douche descendante*, it is not often used, as the

height from which the water must fall is too great, being from fourteen to sixteen feet; so that the lateral douche is almost generally used; the water being pumped from outside the bath, by means of a flexible tube passed through an aperture in the door, an attendant being in the cabinet to direct it against the part of the body indicated. It results from this arrangement, that the douche is often too powerful, and that invalids often have to wait, when several require to be douched, as only one can be attended to at a time. Another point in which the baths at Wiesbaden are deficient, of which I have found the inconvenience, is the want of screens or boards with apertures, through which a person might put an arm or leg to be douched, without taking off his clothes, and going into a bath. Neither are there at the Nassau baths *Douches ascendantes*, *Douches eccossaies*, or alternating douches of warm and cold water, from which so much advantage is derived in some cases.

The temperature of the Kochbrunnen is 158° Fahrenheit: consequently, the water is too hot to be drank quickly; nor is this advisable, as this, like other mineral waters, is better digested when taken slowly by little at a time, than when a quantity of water is taken at once into the stomach. The Adler-spring is not so hot, and that of the Schützenhof, which is farthest off, has a still lower temperature, there being a difference of fifteen degrees between it and the Kochbrunnen. There is no doubt that these springs have a common

origin at or near the Kochbrunnen, and that the difference in their temperature depends upon the water passing some distance underground, before coming to the surface, as has been found to be the case of several other places were the springs were supposed to be different. In a therapeutical point of view, however, the question is not of much importance, as the water being left to cool in reservoirs, or in the baths, for several hours, before it can be used, till it approach the requisite degree of temperature for bathing, the effects must be the same.

In chemical composition, the springs are the same; the Schützenhof spring has a fraction less of saline substance and gas, than the Kochbrunnen, which probably depends upon the same cause as its lower temperature. The principal ingredient is muriate of soda, which exists in large quantity. The only hot springs in Germany which resemble it in this respect, are those of Borcette, near Aix-la-Chapelle. Those of Bourbonne-les-Bains in France, have also some analogy with the Wiesbaden springs. The water contains other salts in small proportions, as I have shown in the analytical table. On account of the large quantity of saline substance, the high temperature of the water, and the gas which it contains, the action of the baths is exceedingly exciting, and under proper management is extremely well fitted to procure the removal of many long-standing and intractable diseases. In most instances, the drink-

ing a glass or two of the Kochbrunnen causes a sense of general warmth, with slight perspiration upon the forehead or lip. When its use is continued, it promotes the action of the skin, generally increasing its secretions, as also those from other organs, as the kidneys or the mucous membrane of the alimentary canal, though very frequently no sensible effects are experienced. Occasionally, however, unpleasant consequences ensue upon the taking two or three glasses, as headache, giddiness, flushing, throbbing of the temples, etc.; and if these should recur upon its repetition, the internal use of the water had better be discontinued, and a cold saline, as Kissingen or Homburg, substituted, if circumstances indicate that these are likely to be beneficial. The water is, however, in general, very well borne by the majority of patients to whose cases it is suited.

With respect to the cases in which the Wiesbaden water is likely to be attended with benefit, I enumerated several in general terms in my earliest publication,* without entering into any detailed account of particular diseases, which would have been foreign to its design, and of which at the time, I did not feel myself sufficiently qualified to speak at length. In another work which subsequently appeared in England on the subject, "The Spas of Germany," the chapter on Wiesbaden is principally dedicated to the description of the town,

* The Baths of Nassau, Baden, and the adjacent Districts (published several years ago).

hotels, Cursaal, and to anecdotes; while the other part relating to the action of the waters is disposed of in about three pages (of the Paris Edition). Knowing the want of information in England, I confess I felt disappointed on reading the work, especially as the author states that his knowledge of these waters is of many years' standing, and has been personally acquired, and prefaces his remarks by a passage that tends greatly to raise the reader's expectations. Disappointment must therefore necessarily ensue, when it is seen, that the subject of gout and rheumatism, in which the Wiesbaden springs are so efficient, is dismissed in six lines, the reader being informed that after bathing, gouty and rheumatic pains increase at first, but afterwards subside; and that the other parts of this cursory account consists principally of a reference to two of three cases, shown to the author by Dr. Peez, a few general rules for drinking and bathing which may be found in every work on mineral waters, and a disquisition upon hypochondriasis.*

It is now evident in England, that the high reputation which the Wiesbaden springs have always enjoyed, for the cure and relief of gouty and rheumatic affections, has not been over-estimated, from

* Dr. J. Johnson, in his more recent work, "Pilgrimages to the Spas," quoted at considerable length the opinions of the writers on Wiesbaden and the other German baths, without however speaking of his own extensive experience of the effects of these agents.

the numbers who annually return home in an improved state; several of whom having for years been subjected to repeated attacks of gout, have escaped any recurrence after a course of the baths, during the whole winter and spring, and have returned in subsequent seasons greatly improved in appearance, more for the purpose of more effectually preserving themselves from a relapse, than from any actual necessity. In cases of long standing, of the atonic kind, with or without deposition of calculous matter in the joints, occurring in persons about or beyond the middle period of life, the Wiesbaden baths are calculated to render the most eminent service; indeed, according to Dr. Peez, the more inveterate the gout is, the more effectually can it be combated by these waters. Though bathing is the most essential part of the treatment, it is advisable in most of these cases to combine with it the internal use of the water. Mild douching will also tend very much to the dispersion of local swellings, puffiness, stiffness of the joints, of the wrist, fingers or foot, and also of chalky concretions, although it should not be used if there be a tendency to inflammatory action, nor until a certain number of baths have been taken. During an attack, the baths will require to be suspended, till the more severe symptoms have subsided; when the patient may again begin, by previously drinking the water while confined to his room. In general, patients who have been accustomed to free living, do not bear a low regimen, and will be the

better, after the inflammatory symptoms are allayed, for being allowed some solid food if an inclination be felt for it; care being taken, that the quality be plain and light, and that the quantity be small. In most cases of erratic, irregular, or repelled gout, these baths will also probably be productive of great benefit, and will not unfrequently cause the morbid action to restrict itself to one spot; a more regular attack being sometimes induced, previous to an amelioration taking place. Persons who have experienced only two or three attacks, but in whom the predisposition is strong, may generally expect to derive permanent benefit from the baths; provided they are subsequently cautious in their mode of living, and do not indulge too freely in the pleasures of the table; on the other hand, where there is much tendency to acute inflammation, and in persons of a plethoric or a highly irritable habit, I should consider Wiesbaden less likely to be beneficial than an alkaline or a slightly mineralised spring, as Vichy, Ems, Teplitz, Wildbad, Buxton, or Chaude Fontaine, or the internal use of a spring like Homburg, Kissingen, or Marienbad, combined or not with baths, according to circumstances.

I should be inclined also to counsel many young persons, in whom the gout developed itself at an early age, in consequence of a strong hereditary tendency, to give the preference to a spring of this kind; though it is probable that they would derive advantage from Wiesbaden. It cannot be expected, however, that a single course of the waters will

always suffice to eradicate the disease; and, in order to have the chance of a permanent cure, persons afflicted with gout would do well to return, for two or three consecutive seasons, to the springs from which they derived benefit; passing the intervening months in a suitable climate, and paying attention to the regulation of their diet and mode of living.

As the mornings are frequently chilly, and it is of importance to prevent the action of a cold atmosphere on the surface of the body, while under a course of bathing, I do not in general recommend to English patients, the very early hours of rising and drinking the water adopted by the Germans; six, or half-past, will be sufficiently early, even for those who take their bath before breakfast, and for those who do not, any time between that hour and half-past seven; breakfast being taken an hour after drinking, and consisting of tea or coffee, according as the one or other is found best to agree. Those who dine at one o'clock, should again drink about seven in the evening; while for those persons who prefer dining at four, or later, from two to three will be the best time for taking the second dose. The effects of the water are thus better sustained, than when the whole quantity prescribed is taken in the morning, and an interval of four and twenty hours is allowed to elapse between the periods of drinking; the water is often thus better digested, and is well borne, when the distension of the stomach by the same

quantity, if taken before breakfast, would disagree, and give rise to unpleasant symptoms, or occasion a too active operation upon the bowels or kidneys. It is also advisable, when a full course of these and other mineral waters is required, to recommend a temporary suspension of the course, and change of air for three or four days, after a certain period of drinking and bathing has elapsed; by this means the system is not too early saturated, and the patient returns to resume the use of the water, in a more fit state for its absorption, and with a greater probability of more durable benefit.

Most chronic rheumatic affections will be removed or greatly relieved by the Wiesbaden baths. In the slighter cases, not of long standing, a short course, for about three weeks, will be frequently sufficient. In the more intractable cases of articular and muscular rheumatism, as also in the pains of a rheumatic nature affecting the face, head, and other parts; a more prolonged course will often be required, combined with the use of the douche. In some cases the hot bath, vapour-bath or douche, may be advantageously employed, especially in elderly persons whose skin is dry, and seldom perspirable. Where, however, the complaint has supervened upon, or has been continued from an acute attack, in which any symptoms of the heart or pericardium being affected were present,—which is more frequently the case than is generally supposed,—it would it be well to ascertain, by auscultation and percussion, that none of these symptoms

remain, as they would very likely be aggravated by the employment of the water. Those rheumatic affections depending upon long exposure to wet or cold, to which military men on duty are peculiarly subject, are especially relieved by these baths. Several bad cases of this kind have fallen under my observation, in which the most beneficial and unexpected results followed a full course of the waters.

Almost all thermal springs are, however, recommended in cases of rheumatism; and there is no doubt, that several of those who have derived benefit from the Wiesbaden waters, would also have been benefited by others; and also, that some waters of a different character would succeed, in cases where little or no benefit ensued from those of Wiesbaden. A person might derive advantage from Wildbad, or any other simple thermal spring, after the failure of a sulphurous spring, or a strongly impregnated saline one, as Wiesbaden. This, however, must be considered as an exception depending upon idiosyncracy, or other peculiar circumstances, not always apparent; as the reverse would be more frequently the case: and if extensive statistical data could be impartially obtained respecting the comparative value of different mineral springs in this disease, I have no doubt it would be found, that, though a simple thermal spring and a hot saline one, are both beneficial in rheumatic, and in certain other diseases; yet that the latter would be more generally successful; that the bene-

fit derived from its use would be obtained in a shorter period of time, would be of a more durable kind, and that relapses would less frequently recur, than when the former kind of spring had been employed. It does not, however, ensue from this, that a slightly mineralised thermal spring is not preferable in some cases, though not in the majority; as for example, where the disease is combined with much nervous irritability; where it is of a subacute form, and calming and sedative remedies are more clearly indicated: as also in young persons of a full or plethoric habit;—in which instances a strong sulphur spring, as Aix-la-Chapelle, or a saline one, like Wiesbaden, would be likely to produce a too perturbatory action;—while the simple thermal springs of Plombieres, Luxeuil, Wildbad, Schlangenbad or Leuk, where persons may remain for a much longer period in the bath, would in all probability be extremely effectual in allaying the morbid irritability, and in removing the disease. On the other hand, where, combined with rheumatic affections, there is a state of general relaxation and debility, the internal use of a chalybeate spring would be more likely to procure their removal; joined either with a course of tepid saline baths, or with baths of the chalybeate water, if not counter-indicated by the patient's condition. Where fixed pains, local indurations or swellings exist, the use of the douche may be advantageously subjoined, after a few baths have been taken. Certain intractable cases which have resisted mineral waters,

as well as the other remedies employed, may yet frequently be relieved by vapour-baths which are established at several places.

Those nervous pains, recurring in paroxysms, affecting the branches of particular nerves of the face, head, or extremities, to which the term neuralgia or tic is generally applied, and which not unfrequently originate from a rheumatic or gouty diathesis, from the suppression of habitual discharges, or of cutaneous eruptions,—which causes, though perhaps somewhat exaggerated by continental practitioners, are not sufficiently attended to in England—are more likely to be relieved and cured by a properly directed course of mineral waters, than by pharmaceutical remedies, or local applications. To many of these cases Wiesbaden would be exceedingly applicable, especially when the functions of the skin are sluggishly performed, and there exists a congested state of the abdominal or pelvic viscera, with retardation or irregularity of the periodical secretion in females. In those cases which appear to arise from other causes, as moral influences, a high state of nervous excitability, &c., I should be more inclined to recommend waters of a different kind. Water or vapour douches may in general be advantageously combined with the baths and the internal use of the same water,—or of a water of a different nature, as that of Homburg, Marienbad, &c., according as circumstances may seem to indicate their employment.

The state of abdominal plethora, with congestion of the liver, and obstruction in the circulation of the vena portæ, termed by the Germans *Unterleibsvolblütigkeit*, with its consequences, as impaired digestion, deficient or vitiated biliary secretion, piles, &c.—occurring for the most part in persons about or beyond the middle period of life, who have been addicted to the pleasures of the table, and marked by more or less protuberance of the abdomen, with diminished muscular and nervous energy, —is one well calculated to be relieved by the use of the Wiesbaden waters internally and externally employed. The baths, by exciting the activity of the nervous and vascular systems, and by determining powerfully to the surface, tend most materially to equalize the circulation and remove the internal congestion, while by the internal use of the water the secretions of the mucous membranes, of the alimentary canal, of the liver and kidneys, are improved in quality, and often perceptibly increased in quantity;—at the same time that the mesenteric glands and absorbent vessels are stimulated to increased activity, and the digestion is consequently improved. Even when under these circumstances the drinking of the water is not followed by immediate sensible effects, it is frequently not the less efficient on that account; and unless some inconvenience be experienced, it should be persisted in, as after a certain time critical symptoms will often occur, and be followed by relief. In several of these cases, especially where there

exists hardness or tension in the region of the liver, spleen, or in other parts of the abdomen, the douche will be of material assistance in the treatment; a cold aperient gaseous water, as Kissingen, or either of the above specified, being preferred for drinking. In many cases of this kind where bathing is counter-indicated, and constipation exists, patients would do better to resort to Carlsbad, or one of the springs already named, according as circumstances indicate.

In hemorrhoidal affections especially, the effects of the Wiesbaden springs are often very marked; indeed Dr. Peez attributed to them a regulating and controlling power in these affections, observing, "The periodical and habitual hemorrhoidal flux, if not too strong nor too weak, if not accompanied with painful symptoms, experiences no change by the action of these baths; especially if it be necessary to health; if, however, it be too abundant, so as to threaten life, the Wiesbaden water, if not used too hot, removes these dangerous phenomena, —a too strong flow is diminished,—one that is too weak, is increased or ceases altogether, according as the condition of the patient's health requires." The physicians at other baths also speak in very decided terms of the effects of their waters in these complaints; as, however, they are mostly of a secondary nature, whichever mineral spring is best calculated for the removal of the causes upon which they depend, should be preferred, though it is seldom that bath physicians would be inclined

to acknowledge in other springs an efficacy superior to those to which they are attached.

In many cases of paralysis, baths of mineral waters offer the most efficient, and often the only means of arousing the nervous energy of the system, and of the paralysed parts; and few have a more beneficial influence in this way than those of Wiesbaden; but here again it cannot always be determined beforehand, that baths of this water will be more effectual than those of other springs containing but a small proportion of solid and gaseous substance, as the latter occasionally succeed after the failure of the former. In the obscurity which still envelops the mode of action of mineral baths, this cannot be satisfactorily accounted for, except upon the principle of idiosyncrasy, or by the supposition that the disturbing action of a thoroughly impregnated spring is less adapted to certain of these cases, than the more tranquillising and sedative influence of a simple thermal, or slight alkaline, warm spring. In most instances, however, where there does not exist a high degree of nervous excitability, or tendency to fulness in the cerebral vessels, the baths of Wiesbaden may be used with great prospect of advantage; especially when the complaint is of a rheumatic origin; or depending upon the impression of poisonous influences upon the nervous system, as malaria, the abuse of mercury, or the employment of this or some other metals by workmen; as also in those cases, where the disease appears to be of

a purely local nature, not connected with cerebral disease, but arising from deficient energy of the nerves of the part, or of the spinal marrow, consequent upon exposure to cold or wet, or other analogous causes. Even in paralysis affecting a limb or one side of the body, remaining after an apoplectic seizure, baths of this or other mineral waters may often be advantageously employed, provided there be no symptoms of cerebral congestion, or organic disease. Plethoric individuals, and those whose digestive organs are disordered, will frequently require some preparatory treatment, previous to using the baths, in paralytic, as well as in other complaints.

These, then, are the principal diseases which the Wiesbaden waters are more especially calculated to relieve, and in which their use in the form of baths and douches is the most essential part of the treatment. There are besides various other complaints to which the external or internal use of the water, or both combined, is extremely suitable, in common with several other mineral springs; but of which the peculiar circumstances of each case require to be investigated, in order to enable the practitioner to decide upon the spring likely to be most effectual. Of these, many scrofulous affections will be cured or greatly ameliorated by the internal or external application of these waters; particularly enlarged lymphatic glands of various parts, and of the mesentery, occurring in children or young persons of a torpid habit, with tumid

upper lip and abdomen, a vitiated state of the intestinal secretions, and a harsh dry condition of the skin. Here the exciting and resolvent powers of the waters are exceedingly effectual, by improving and augmenting the secretions of the alimentary canal, and of the skin; and by stimulating the absorbent and vascular systems, mostly cause the speedy diminution of glandular or bony swellings. In many cases of this disease, however, a water like Ems or Kreutznach, would be preferable.

Another case, in which the Wiesbaden springs are often eminently serviceable, is, where there is a generally disordered state of health, without the existence of any actual disease, or material derangement of any particular functions, except, perhaps, impaired digestive powers,—as is very frequently seen in Londoners, and inhabitants of large cities, closely engaged in trading, mercantile or professional occupations; as also those who have been resident in a tropical or unhealthy climate; such a state, though relieved and palliated for a time by medicines, not unfrequently terminates in serious functional or structural disease, if allowed to continue for a long period,—and nothing would tend more effectually to its removal than temporary absence from the cares of avocation, change of air and mode of life, and the employment of a mineral spring, like Wiesbaden, followed by that of a chalybeate water, in those cases where it is not counter-indicated.

The same may be said of several cases of hypo-

chondriasis, with disordered digestive powers, to which Wiesbaden is applicable, both on account of its waters tending to rectify the deranged state of the digestive organs, and also from the beneficial influence which would be exerted in most instances on the patient's *moral*, by the movement of the place, its cheerful appearance, the beauty of its environs, and the neighbourhood of so many objects of interest. To some patients of this class, tepid bathing, with the internal use of a cold gaseous spring is most applicable. To others, again, certain other mineral springs are best adapted.

The suppression or painful performance of periodical functions, peculiar to females, is frequently benefited by the Wiesbaden baths; especially if the cause be cold, checked perspiration, or a congested state of the abdominal or pelvic viscera. Some syphilitic affections, especially where much mercury has been employed, and certain chronic cutaneous diseases, psoriasis, impetigo, etc., where the skin is generally in a dry state; as also eruptions of the face depending upon derangement of the alimentary canal or liver, will often be removed by baths of a warm saline water, like Wiesbaden; and likewise by sulphurous or alkaline springs, either alone, or combined with the internal use of the same, or some other mineral water. In certain bronchial and laryngeal affections, with cough, and scanty or deficient expectoration, the Wiesbaden baths, combined with the internal use of the water, and the

inhalation of its vapour, may be expected to be of material advantage.

On the other hand, these springs, like most others, will generally be prejudicial in organic disease of the lungs, heart, or large vessels; in disorganisation of the abdominal or pelvic viscera, with fever, profuse hæmorrhage, or discharges *per vaginam*, either depending upon relaxation, or upon the presence of hypertrophy, polypus, or other structural disease.

The beneficial effects of the Wiesbaden, and other mineral springs, are mostly evident during the time of their use, after the system has been for some time subjected to their action, and are not unfrequently consecutive to discharges, or eruptions of a critical nature, induced by the water, which by its perturbatory action, and exciting the vital energies, frequently brings diseases from the chronic to a more acute state previous to their removal. Hence a slight degree of feverishness, with increase of long-standing pains, etc., are frequently proofs of the beneficial action of the water, and precursors of a favourable change. In other instances, no perceptible effect or amelioration takes place during the employment of the waters, but become apparent after they have been for some time discontinued. When this is the case, or when a degree of benefit has been derived during the course in long standing or intractable disease, it would be most advisable for the person to return the following season, as it can scarcely be expected

that complaints, which have existed for months or years, are to be always removed by a three or four weeks' course of mineral waters. The invalid, under such circumstances, should therefore be contented with the proofs he has already received, that the waters have been of service, and may, in most instances, look forward with confidence to a removal of the disease, or to a still greater degree of amelioration, on resuming their use the following season.

As climate has also great influence on the production and removal of several diseases—especially gout, rheumatism, neuralgia, paralytic, bronchial and scrofulous affections—patients who have been benefited by a course of mineral baths, will find the benefit to be of a more lasting nature, and that they will be less liable to relapse, if, instead of returning to the more humid and variable atmosphere of some parts of Great Britain or Ireland, they could pass the winter in the south of Europe, as at Pau, Nice, or one or other of the large towns of Italy, south of the Appenines, or in one or other of the places of resort in the south of England.* This is more especially advantageous, when a repetition of the course is advisable in the following summer; as the effects of the waters would be in a great measure kept up, and seconded by a warm

* For information on these points, I beg to refer to my "Continental Travel, with remarks on Climates, &c.," and to the last edition of the "Baths and Watering Places of England."

climate during the winter, and the invalid would return to the springs under more favourable circumstances for deriving permanent benefit. Wiesbaden itself possesses greater advantages as a winter residence for an invalid than any other of the towns along the Rhine with which I am acquainted. Sheltered from the north and east by the Taunus hills, with a comparatively open country to the south and west, the locality of Wiesbaden is warmer than most others in this part. It is comparatively free from damp,—the air is light and healthy, snow seldom lies upon the ground, and the winter is in general mild, as indeed might be surmised from the circumstance, that acacias, and various other trees of more southern climates thrive exceedingly well. The accommodation is also good, and the waters may in some cases be continued during part of the winter. Osann, in his standard work, considers Wiesbaden as the place best adapted for the use of the waters in the winter months.

A two hours' drive, passing through the most beautiful part of the Rheingau, will bring the traveller to

SCHLANGENBAD.

Few places would be more eligible, as a summer residence, for those who prefer seclusion and tranquillity to the crowd and bustle of large baths,

than Schlangenbad, which possesses most of the advantages sought for by those whose health requires rather repose than energetic medication. Situated in a beautiful and sequestered valley, enclosed between well-wooded hills, (on which paths, easy of ascent, have been constructed to the summit, whence may be obtained fine views of the surrounding country,) and near the richest part of the Rheingau, it possesses great facilities of communication with the Rhine, and with the other baths of Nassau, especially Schwalbach and Wiesbaden, to which good roads conduct. The numerous ruins and other objects of interest, within an easy distance, will enable visitors to vary their rides and drives, while predestrians will derive great gratification from exploring the beauties of the forest scenery—particularly through the valley in the direction of Schwalbach. Those who are unable or disinclined for ascending the hills, or for distant excursions, may take air and exercise at any time of the day in the shaded alcoves formed by the interlacing of the boughs of trees, and extending from the door of the hôtel a considerable distance towards the woods.

Besides the old and new bath-houses, the Nassauer Hof hôtel, and the long antique looking gallery, which served as a promenade room, of which Schlangenbad originally consisted, there have been erected, since the place has been more brought into notice by the publication of the "Bubbles," an Englischer, a Russischer, a Hanauer Hof, and

other houses, for the accommodation of the increased number of visitors. At the Nassau hôtel, which belongs to the Duke, and also at the bath-houses, the apartments are very clean, neatly furnished, and reasonable, the price of each being inscribed over the door. Most persons content themselves with a bed-room, and dine at the table d'hôte, where the dishes, if not so varied as at Wiesbaden, are sufficiently abundant, and good in quality. A reading-room and a circulating library have been recently established in the new bath-house.

The bathing cabinets, notwithstanding the depreciating terms in which Dr. Granville has spoken of them, are exceedingly convenient, more so, indeed, than at most other baths, and infinitely superior to the closets for undressing adjoining the piscinæ at Wildbad. They are for the most part lofty and well ventilated, and are divided into a dressing-room and a large and spacious marble *baignoire* capable of containing five or six persons, though it is only intended for a single person, bathing in common not being the practice at Schlangenbad. The bather, consequently, is not obliged to lie down in water about two feet deep, but has ample space to play or move about, the water being admitted in large quantity, so as to rise nearly breast high; the temperature can also be increased by the bather at pleasure, by admitting more warm water; though some persons, in the height of summer, prefer bathing in the water

at its natural temperature, about 22° Reaumur. A bath of this water, like others of the same class, imparts softness to the skin, with a pleasurable sensation while it lasts, and a feeling of *bien-être* for the remainder of the day. The worthy Dr. Fenner, in his flowery style, says, "Vous sortez des Eaux de Schlangenbad, rajeuni comme un phénix; la jeunesse y devient plus belle, plus brillante, et l'âge y trouve une nouvelle vigueur;" which is not so figurative a language as many might suppose, as is testified by the improved appearance of many young persons, and the increased activity of older ones, who have gone through a course of these baths.

From its chemical composition the water may rank with the alkaline thermal springs; a pint contains about six grains of solid substance, being double the quantity contained in the same proportion of the Wildbad water; one half, or three grains, being carbonate of soda, and is very analogous to that of Neris in France. It contains but a small proportion of carbonic acid gas, not more than a cubic inch and a half to the pint, which, however, is more than in the water of Baden. Medicinally considered, it may be applied in most of the cases where a soothing effect is required; some rheumatic and neuralgic affections, with the character of irritability, would derive great advantage from a course of these baths.

Baths of common warm water, it is well known, are not suited to rheumatic cases, inasmuch as they

tend to debilitate the system, and diminish the vital energies of the skin, rendering it more susceptible to the influence of atmospheric vicissitudes; whereas, baths of thermal waters, containing even less saline substance than Schlangenbad, are found by experience to have a contrary effect. A congestive state of internal organs, with deficient circulation of the capillaries of the skin, in weakly and delicate persons, would be likely to be relieved by these baths; more especially, when the lungs or air-passages are implicated, and a gaseous water, more strongly impregnated with saline substance, as Ems, could not be borne. In such a case, the internal administration of a water of a different kind, as Weilbach or Selters, might be advantageously combined with the baths. Schlangenbad ranks high as a bath for the relief of nervous affections of a spasmodic nature. Hufeland, who is considered a high authority on the subject of mineral waters, says, in speaking of Schlangenbad, "Its operation is softening, purifying, and sedative, allaying irritability. I know no bath so proper for all kinds of nervous affections, especially in females unable to bear medicines, or mineral waters in general; and where the chief indication is to diminish morbid irritability and convulsion. In such cases is Schlangenbad a true, and often an only means of strengthening the nerves, while Prymont and Driburg would often fail." In some instances, however, which have fallen under my observation, even the baths at Schlangenbad have

proved too exciting, and have increased the nervous irritability. In persons whose general health is disordered, without any marked local disease, as is frequently seen in those whose minds are subject to the anxieties attendant on commercial or professional pursuits, and also in those who have been during several months engaged in the routine of metropolitan dissipation, the Schlangenbad baths are an excellent restorative, either alone, or combined with the internal use of a chalybeate or other mineral spring, according to circumstances, or as a precursory measure to the employment of more strongly mineralised baths. Elderly persons, whose skin is dry and rough, and who have to complain of a degree of stiffness of the limbs, with whom a more exciting bath would be likely to disagree, frequently find these inconveniences in great measure removed, and their general state of health improved by a course of these baths. Hufeland says, "I know of no bath so fitted to preserve the character of youth, and retard that of old age: and this I know from experience, that the yearly use of it gives to an old man cheerfulness, pliability of the limbs, and increased vigour."

SCHWALBACH.

Langen-Schwalbach lies in a deep valley on the high road from Frankfort to Coblentz, between

Ems and Wiesbaden; about four hours' drive from the former, and two from the latter bath; and to a traveller passing through, it would not appear a very attractive spot; yet there are few places where a few weeks in the summer could be more agreeably passed, by those desirous of avoiding the bustle and crowd of larger watering-places. The position is considerably higher than Wiesbaden, from which it is separated by one of the highest of the Taunus hills; and though the acclivities on either side of the valley, being denuded of wood, reflect the sun's rays powerfully upon the town, so as to render the heat at times inconvenient, yet the air, especially on ascending from the valley, is light, dry, and bracing. There is, however, a deficiency of shaded walks near to the town, the only ones in the immediate neighbourhood being the Allee, an avenue of trees adjoining the principal hotel, and the double row of trees at the Stahlbrunnen; those planted within the last few years on the promenade between the Wienbrunnen and Pauline springs affording as yet but little shelter in the middle of the day. Owing to the increased influx of visitors, the town has become much enlarged, and improved in appearance and accommodations; three or four new hotels, and several lodging-houses have arisen, to compete with the old established ones, the Poste, and Golden Chain. The Allee-Saal, the largest of these hotels, contains public rooms, where balls and concerts are occasionally given, and some

English and French newspapers are taken in. Close to the Allee-Saal is the handsome new bath-house erected by the late Duke, which is the first object to attract the visitor's attention on descending the hill on the Wiesbaden side. Below is a colonnade with shops for the sale of fancy articles, and on the first floor a promenade-room extending the whole length of the building. The bathing cabinets, which are roomy, convenient, and neatly furnished, are divided into three compartments on the ground and first floors, for baths of each of the three springs. In the door of each cabinet is an aperture to admit the douche-pipe; douches being given here, as at the other Nassau baths, by an attendant pumping from the outside, while another inside directs the water against the part indicated. Adjacent to this edifice rises the Weinbrunnen, and a quarter of a mile further up the valley the more recently enclosed Pauline spring; the broad foot-paths on either side of the meadow between these springs, being the usual promenade at the hours of drinking, when, as at most other baths, a musical band is in attendance. The Stahlbrunnen, of which the visitors are less numerous, is separated from the other springs by a hill. A fourth spring above the Pauline has been recently enclosed, but is not used.

The walks and rides extending beyond the Pauline in different directions along the valley, and among the hills, through woods of oak, ash, and fir-trees, are highly beautiful and varied. Those

also which are continuous with the fine poplar avenue leading from the Stahlbrunnen are extremely interesting, while on the opposite side of the town the visitor will be equally gratified by the beauty of the environs, whether he turn to the left and ascend the beautifully wooded valleys to Adolphseck, and the picturesque ruin of Hohenstein, five miles distant; or take the road to the right towards the Eisenhammer, and stroll among the hills and valleys in that direction.

The water has a temperature of 8° Reaumur, is pleasant and bracing; most persons after drinking a glass or two experience a degree of increased vigour, imparting, as the author of the "Bubbles" expresses it, "a desire to face the hill."

When it agrees, it not does produce any unpleasant feelings, or constipation of the bowels, but a sensation of exhilaration and general *bien-être*. In some persons, however, especially if plethoric, its action is so exciting, that even a small quantity could not be repeatedly taken without risk, neither could it be borne in many cases where there existed a high degree of nervous irritability. The three springs vary in the amount of solid and gaseous parts. According to Kastner's analysis, the Stahlbrunnen contains but little saline substance, (from 3 to 4 grains,) and nearly three quarters of a grain of carbonate of iron to the pint; hence it is termed the steel spring in contradistinction to the others, though it actually contains a fraction less of iron than the Weinbrunnen, in which the taste of the

metal is not so marked, owing to the larger quantity of salts and gas contained in an equal quantity of water. The Pauline spring has less iron than either of the others, and also less gas, which is not so intimately combined with the water, on which account it is more likely to disagree with some people: with others, however, it agrees better than either the Weinbrunnen or the Stahlbrunnen.

From the different proportions in which the constituent parts are combined, the Schwalbach springs are capable of fulfilling various indications, and are applicable to the majority of cases in which chalybeates are required. When one spring disagrees, one of the others is frequently found to answer remarkably well; hence Schwalbach has the advantage over other places which only possess one spring, or where the springs—if there be several—do not vary materially in their composition and effects.

I consider the Wienbrunnen to be in general the preferable spring for drinking, its constituent parts being intimately combined with the water, and in the proportion best adapted for producing a tonic effect, without being too astringent or heating. In composition it holds an intermediate position between the Pouhon of Spa—which the Stahlbrunnen more nearly resembles—and the Trinkquelle of Pyrmont, containing about twice as much salts, gas, and iron, as the former, and considerably less of the saline and gaseous parts than the latter, though nearly as much iron. The water is well adapted for exportation, and may be drank at a distance, com-

bined or not with a course of baths at another spring. I have on several occasions recommended the internal use of the Schwalbach water, to patients using the baths of Wiesbaden and Schlangenbad.

These springs are more particularly suited to cases of pure general or local debility, not depending upon the presence of disease of any particular organ, but arising more from general poorness of blood, with a deficiency of its red globules, and as a necessary consequence, a laxity of the solids, with sluggishness in the performance of the functions of life, as in leucophlegmatic and chlorotic individuals. In debility of the stomach and bowels, with consequent scanty or impaired secretion, they are a most efficient remedy, and by exciting the activity of the glandular apparatus, while at the same time they give tone to the muscular coat, tend to remove a torpid or a too relaxed state of the alimentary canal, much better than cathartics or astringents, the action of which is mostly but of a temporary and palliative nature, and is too often followed by an aggravation of the malady.

A constipated state of the bowels not unfrequently arises in indolent habits from a deficiency of their vitalily and muscular energy, and would be removed by remedies which best impart increased vigour to the system. On the other hand, a degree of relaxation may arise from the same cause, and from preternatural weakness of the mucous membrane—hence these opposite states may originate from the same source, viz. debility, and

may often be rectified by a similar remedy. In cases of nervousness in either sex, with the tendency of spasmodic action, so frequently occurring in young females, when there is no manifest visceral congestion or *engorgement*, they are generally highly efficacious in removing the morbid susceptibility of the nervous system. Where, however, there exists high nervous irritability, especially in persons of a plethoric habit, with irregularity in the distribution of the blood to particular parts, as marked by frequent headaches, flushings, coldness of the extremities, and disordered menstruation, they are not advisable, and cannot be borne, till after the irritability has been allayed, and the circulation of the blood more equalized by sedative and tepid baths as Schlangenbad, or by other means; when this has been effected, chalybeate springs may be used with the greatest probability of permanent benefit. A similar plan of treatment is well calculated to remedy the deranged state of health, with general weakness, so frequently seen in residents of large cities, either when it is a consequence of over anxiety, the pressure of particular avocations, etc., or of dissipation. Nothing would be so likely to restore vigour to the nerves, and colour to the cheeks under these circumstances, as a course of chalybeate baths, or the internal use of a chalybeate spring combined with, or subsequent to, bathing in a thermal water. In some elderly persons also, whose nervous energy and digestive power are impaired, the springs of Schwalbach, and

the bracing quality of the air, would prove excellent restoratives; though in extreme old age, or where there existed great depression of the powers of life they would not be admissible. Cases of the nervous kind of hypocondriasis, without material disorder of the digestive functions, would most likely be benefited by waters of this class, which would likewise be highly serviceable in some cases of relaxation of the mucous membrane of the air-passages, without inflammatory complication, but attended with mucous expectoration, or occasional passive hemoptysis, with muscular debility and mental lassitude.

The Schwalbach waters are not unfrequently recommended to patients who have undergone a course of those of Ems or Wiesbaden, and are of great service in removing the lassitude and relaxation sometimes remaining after their use. As, however, the beneficial action of the above mentioned and other springs is frequently not manifested till some time after they have been discontinued, much harm has resulted in not a few instances, from patients employing chalybeate waters immediately after a course of thermal baths. Dr. Fenner, in one of his recent works, alludes to the abuse frequently made of chalybeate springs in these terms: "While it is not be to denied, that in many cases an after-cure by means of chalybeate waters cannot be dispensed with, yet it must be admitted that their much too general and vague employment has been the occasion of great harm. Experience but too frequently teaches us, that patients who had become

considerably better by their course of thermal waters, have got much worse, and lost the advantage they had previously obtained, from being ordered to use a chalybeate spring."* Hence it would be advisable, when subsequent critical effects are expected, not to employ a chalybeate, by which their occurrence might be prevented: and even when tonics are considered necessary, to allow some interval of time to elapse between the employment of two classes of springs differing so much in their nature.

In most instances the internal use of one of the Schwalbach springs is combined with baths, which are in many cases the principal means of relief. In fact, from the whole surface of the body being exposed to the action of the water in bathing, a considerable quantity of the iron is absorbed, and the tonic effects are frequently experienced by the patient immediately after the bath, which is thus a valuable means of obtaining advantage from these waters, when their internal use produces constipation, headache, and other unpleasant symptoms, as not unfrequently occurs in weakly and scrofulous children, and persons of a full, though flabby habit. Where also there exists some local affection, as rheumatic pains, weakness of parts, relaxation of the ligaments of joints, neuralgic complaints, &c., the baths will be the most essential part of the treatment, and the douche may in most of these cases be advantageously employed.

* Ueber Nachkuren.

In cases of dysmenorrhea, menorrhagia, and leucorrhea, arising from general debility, or local relaxation, and not depending upon a state of irritation, or vascular congestion, from fifteen to twenty-five baths would be likely to render effectual service. The baths should be taken at rather a low temperature, as 25° or even 24° R, as the object of them is to strengthen, and not to relax, which a hotter bath might do. At first a slight shuddering is generally experienced, which does not last more than a minute or two, and is succeeded by a comfortable sensation of warmth. Dr. Fenner recommends the Weinbrunnen baths in preference, where the object is to obtain the absorption of a large quantity of the iron, as in chlorosis, torpidity of particular functions, stomach and bowel debility, uterine relaxation, the weakness remaining after acute disease or profuse discharges: the Stahlbrunnen in atony or laxity of the skin and muscles, or paralysis, or passive hæmorrhage; and the Pauline, where a milder tonic effect is required, as in children and old people. He likewise observes, what requires to be noted, that passive hæmorrhages, and the discharge of leucorrhœa, become much increased at the commencement of the treatment, but on continuing the baths, they gradually become less, and ultimately cease. It is a bad sign when the copious discharge is suddenly stopped by the too powerful contraction of the vessels induced by the baths, as it returns shortly after, and a degree of weakness succeeds. When speaking of sterility, Dr. F. remarks, "All baths have been praised for their power in

this respect, all have their Bubenquelle. Whether one goes to Carlsbad, Marienbad, Franzensbad, Pyrmont, Spa, Bareges, Ems, or elsewhere, one will equally hear wonderful histories, and at no place will it be admitted that the individual spring fails." * A spring like Ems would be more likely to remedy this condition, in cases where there existed a high degree of irritability, either general or local; with painful menstruation, tendency to cramp; or nervous weakness, combined with an extreme susceptibility originating from irregular distribution of blood, and undue determination to the uterine system. On the other hand, where sterility is connected with an apathetic or a tonic habit, coldness of temperament, torpidity in the performance of the vital functions, nervous debility depending upon diminished vitality; depressing moral impressions, or serious illness, general poorness of blood or chlorosis; or with local debility of the uterine system, either from chronic leucorrhœa or copious hæmorrhage; there would be more probability of its being remedied by the employment of chalybeate springs, or by other tonic means calculated to remove its causes.†

The road to Ems is hilly as far as Nassau, a

* Die Bäder in Schwalbach.

† A work on Schwalbach has this season been published by Dr. Genth, which I had no opportunity of seeing in London. The name of the author is unknown to me as a practitioner of Schwalbach or Wiesbaden, though I have visited these baths almost every season for some years. I do not, therefore, expect that I should have derived from it much additional information respecing the waters.

pretty hamlet delightfully situate on the right bank of the Lahn, which is crosed by a neat suspension bridge. On the hill overlooking the village are the ruins of the castle, (which with the surrounding territory was the original patrimony of the ancestors of the Duke,) forming a prominent and interesting feature in the scene. From Nassau the road is carried along the right bank of the river, winding between well-wooded and cultivated hills to

EMS,

Which is not a very eligible place for the prolonged summer residence of those who do not require the use of its waters. From the extreme narrowness of the valley and comparative want of free ventilation, the heat and oppressive nature of the atmosphere, in the months of July and August, are at times excessive, producing general relaxation, langour, and lassitude, in healthy persons. It is also indifferently provided with shade; and the hills on either side are so steep, as to render their ascent fatiguing to pedestrians. On this account numerous well-conditioned donkeys are always in readiness for excursions, and are the best means by which invalids and weakly persons can take exercise on the hills where the air is more invigorating. The position of Ems is striking and beautiful, and the adjacent country highly interesting, especially along the banks of the Lahn,

either following the stream to its junction with the Rhine, or ascending beyond the pretty village of Nassau to Arnstein, and the other objects of interest in its vicinity. After the extreme heat of the summer is passed, Ems will be found to be an agreeable spot for a few weeks, during September and part of October, at which period the waters may still be used with advantage: especially when taken internally by persons who purpose passing the winter in a more southern climate.

Several improvements have taken place at Ems of late years; new houses have been erected, and a handsome Cursaal has been built on the promenade, in place of the former low and irregular edifice. The houses where the best accommodations are to be found, are the Curhaus, belonging to the Duke; the Russische and Englische Hofs; the new hôtel of the Vier Jahrszeiten, and the Vier Thürme,—a large isolated building surrounded by a garden, at the extremity of the town, and the only private house possessing baths,—which, with its turret at each angle, forms a striking object in the picture of Ems. A large hotel and a street of houses have been built on the opposite bank of the river.

There are numerous mineral springs arising from the steep mountain, the Baderberg, immediately behind the Curhaus, on both banks of the Lahn, and in the bed of the river; gas bubbles being constantly seen escaping from its surface, near the Cursaal. Eighteen of these have been examined and analysed; their temperature varies from 18° to 44° R., several of them being employed for

baths; and two, the Kesselbrunnen and the Kränchenbrunnen, principally for drinking. A new drinking spring, the Furstenquelle, has also latterly been greatly employed. The carbonate of soda is the prevailing ingredient in these waters; the muriate of soda is also a large quantity. According to the last analysis by Kastner, a pint of the Kränchenbrunnen contains 31½ grains of solid substance; the analysis by Struve, on the other hand, states the amount of saline substance to be about 20 grains, with scarcely half the carbonate of soda yielded by the same quantity of the Kesselbrunnen water; whereas Kastner states the quantity of this salt to be about equal in both, viz. 20 grains to the pint, and this I should conceive to be most correct. The last-mentioned spring is much less gaseous, containing, according to Kastner, 12·45 cubic inches of carbonic acid gas to the pint, whereas the Kränchenbrunnen contains 17·45; its temperature being lower (24° R.), and the amount of water supplied being much more limited than the Kesselbrunnen, which has a temperature of 37°. Thus, supposing this to be correct, the springs of Ems resemble greatly in point of temperature, and in the nature of their composition those of Vichy, which also have a range of temperature, varying from 18° to 44°. There is, however, a great difference in the amount of the principal mineralising ingredient, the carbonate of soda, which is more than double in the Vichy springs, which contains, according to Longchamps,

45 grains to the pint. The analogy is still closer between the springs of Ems and those of St. Nectaire in Auvergne, the temperature of which is from 20° to 31°,—and which contain about 24 grains of carbonate of soda, 18 of muriate of soda, and 13 cubic inches of carbonic acid gas to the pint of water. Teplitz, on the other hand, is a more exclusively alkaline water, containing little else than carbonate of soda, which is in less proportion than in the Ems water. The proportion of gas is also very small.

The different proportions of the saline substance and gas, of the principal springs of Ems, enables the practitioner the better to adapt their employment to particular conditions and constitutions; the internal exhibition of the Kesselbrunnen being better suited to some individuals, than the Kränchenbrunnen and *vice versâ*, and where a milder effect is required, the Furstenquelle is preferable to either of the other. The action of the water is essentially alterative, improving the secretions of the alimentary canal and of the kidneys, in many instances without any increase in their quantity. Indeed, as far as the state of the bowels is concerned, the reverse is not unfrequently the case, and it becomes necessary to have recourse to medicine. A slight degree of perspiration is produced in many individuals; especially when the internal use of the water is combined with bathing. As great part of the gas escapes, prior to the water being used in the form of bath, it has not the sti-

mulating action of some other baths more strongly impregnated with saline substance; hence, though determining to the surface, and producing increased activity in the functions of the skin, thereby relieving a congested state of the mucous membranes or parenchymatous viscera, it has at the same time a sedative operation on the nervous system, allaying its morbid irritability. In certain individuals, however, the bath occasionally produces a powerfully exciting effect, and could not be continued without danger.

The Ems waters, like most other warm springs, have been much recommended in gout and rheumatism; but in most cases of the more intractable forms of these complaints, especially in elderly persons, I should prefer a spring of a different kind. In some of the milder forms, in young subjects, with a tendency to inflammatory action, or co-existing with nervous irritability, the Ems springs would be preferable.

The resident practitioners also speak highly of the effect of these waters in cases of disordered digestive functions, with torpor of the liver; and there is no doubt, that in several of these cases, attended with heartburn, acidity, and other symptoms of a vitiated state of the secretions, they are calculated to be of considerable benefit,—they are also well adapted to some deranged states of the health, occurring to women and children; without any particular organ appearing to be the seat of

disease. Dr. Diel, who was bath physician at Ems, for upwards of thirty years, strongly recommended the waters in congested states of the abdominal circulation, with its consequences, hemorrhoidal affections, etc., and also in dysmenorrhœa, and some other diseases peculiar to females. Dr. Döring also, who has published a work on the Ems springs,* which, like most others on particular baths, enumerates a long list of diseases which they are calculated to cure, adds his testimony to their beneficial influence in these complaints, and in some measure compares them with those of Carlsbad,—admitting, however, the latter to be best suited to torpid habits; but with the exception of their temperature, there is no other point of resemblance between the Ems and Carlsbad water, both their composition and *modus operandi* being very different. The Carlsbad water is exceedingly energetic and exciting in its action, and is generally productive of sensible effects at the time; the sulphate of soda being the predominant salt, of which the Ems water scarcely contains a trace. The Carlsbad water also is almost exclusively taken internally; whereas, at Ems, bathing forms a principal, and in many instances, the most essential part of the treatment. In fact, I should say, that for most of the cases to which the Carlsbad waters

* Ems mit seinen natürlich-warmen Heilquellen und Umgebungen.

would be best adapted, those of Ems would be inapplicable, or not productive of benefit; and that, on the other hand, Ems would relieve in several complaints, where Carlsbad would be prejudicial. The same author, speaking of the advantages of Ems, as a winter residence for the use of the waters, cites the example of patients going to Mont d'Or and to Bath, to use the waters in the winter. If, however, he were acquained with the locality of the former place, he would be aware that it is deserted, except during the season; and if people go to Bath in the winter, perhaps not one in a hundred goes there exclusively for using the waters. Ems, in fact, offers no inducement, either in point of locality or climate, for any one to pass the winter there. It is, however, a too prevailing error among watering-place practitioners, and not one likely to be soon rectified, to exaggerate the advantages of their localities, and the effects of their waters. On the occasion of a former physician having too universally extolled the Ems waters, Dr. Wetzler, who is no inconsiderable authority on mineral waters, says, "Thilenius calls on the unbeliever, and bids him come and see. I did come, and have seen, what I have also seen in every other bath, viz. that part of the sick were cured or relieved, and that part left the place uncured and unrelieved. I saw some who bathed their eyes during four weeks, and they were no better; others, who still had their gouty and rheumatic pains when they left. I saw some patients arrive with hoarseness, who, when

they went away, could not speak a loud word; and others, who, when they left, coughed and breathed as badly as when they arrived." *

The Ems waters would be likely to be of great service in irritation of the urinary passages, with deposit of lithic acid, or other gravel; especially where there exists a gouty or calculous diathesis, or when combined with a deranged state of stomach. In these cases, the baths will be of essential service, not only by determining to the skin and increasing its secretion, but also from the absorption of a portion of the alkali, which is known to have a sedative effect on these organs, and to alter the quality of the urine, rendering it less irritating. In some instances, the bathing might be advantageously combined with a cold gaseous water, containing a larger proportion of alkali. Dysmenorrhœa, and some other states of deranged uterine function, depending upon congestion and irregular circulation, and sterility, arising from the same cause, or upon high nervous irritability, from moral impression, or from other causes, are likely to be removed by the Ems springs, which, by their tranquillizing effect upon the nervous system, and by their general alterative properties, tend to restore the equilibrium between the vital state of the uterus and that of the system in general. Where the object is to remove sterility, the *douche ascendante* of one of the springs,—which from its sup-

* Ueber Gesundbrunnen und Heilbäder.—Mayence.

posed power in these cases has been named "*Bubenquelle*,"—is frequently employed, and may be of service in assisting the general action of the waters. *Douches ascendantes* are, however, in much more general use in several of the French Baths than in those of Germany; and there is no doubt they are very effectual in promoting the removal of some disordered conditions of the uterine system, and of the lower bowels. Of course, where sterility, as well as the states of disordered function to which I have alluded depend upon causes of an opposite character, remedies of a different kind will be required for their removal.

But it is in diseases of the respiratory organs that Ems has acquired the highest reputation; patients with these diseases forming annually a large proportion of its visitors, some of them in such an advanced state of disease as to be little likely to derive any advantage from any remedial measures. Hufeland, in alluding to the effects of the Ems waters, in this class of disease, says, "We know how few mineral springs there are, that can be used with safety in diseases of the lungs; patients with such affections are commonly prohibited from visiting a mineral spring; here the reverse is the case, and, in my opinion, Ems stands alone with Selters in this respect."* Diel also adds his testimony to their efficacy in these cases, and

* Practische Uebersicht der vorzüglichsten Heilquellen Deutschlands.

in certain kinds of asthma. These recommendations from such high authorities have induced many patients to flock to Ems, and not a few have been doomed to disappointment in consequence of their disease being in such an advanced stage, as to render the waters inapplicable with advantage, or directly prejudicial. It is, however, acknowledged by all the physicians, that in confirmed phthisis the Ems waters would not be suitable. In the earliest stage of that disease, (or when there merely exists a predisposition to it, without any actual signs of its presence,) whilst the tubercles are in a latent state, and limited in number,—which may often be ascertained by auscultation and percussion,—and where the patient has merely slight cough with mucous expectoration from sympathetic irritation of the bronchial membrane, without hectic fever, great emaciation or debility,—a course of these waters, followed by a proper attention to climate for the ensuing winter, may do much. In some cases also of laryngeal or bronchial disease, which often closely resemble tubercular phthisis, occurring in young persons, or those approaching the middle age, the waters of Ems, or those of Cauterets, or the Eaux Bonnes, which are the lighter kind of sulphurous springs in the Pyrenees, would, in all probability, be extremely beneficial; as also where an attack of inflammation has left an obstruction to the free circulation of blood through the lungs, from partial hepatisation of their texture; where, however, this exists to any

extent, the waters would probably be inadmissible; or, if their employment were allowed, the effects would require to be closely watched. In most of the chronic catarrhal affections of old people, with copious expectoration, to which warm mineral waters would be suited, I should be more inclined to recommend Wiesbaden, or Aix-la-Chapelle, than Ems. Several of these cases, however, would be better treated by waters of a different nature, as far as internal exhibition is concerned; though this may often be most advantageously combined with bathing in a thermal water. In many of these affections of the respiratory apparatus, the inhalation of the vapour of the water is of material service. Dr. Döring recommends the Ems springs in scrofulous diseases; and in many of these affections I should say, they are likely to produce a great amelioration; especially in delicate children with enlarged mesentric glands, the water being drank alone, or with milk, and combined or not with bathing, according to circumstances. In several patients with enlarged glands of the neck, and other local affections, from the same constitutional cause, a course of Ems waters would be highly serviceable as a preliminary to the employment of a more tonic medication; tonics being very often indicated in these patients, who, however, are frequently not able to bear them, without the previous use of remedies of a more solvent kind.

In nervous affections of an hysterical nature, Ems is calculated to be of considerable benefit,

particularly if there coexist disorders of the digestive functions, or of the periodical secretion, with irregular distribution of blood, as marked by frequent flushings, cold feet, etc.

The scenery of the Lahn, for several miles above Nassau, is extremely beautiful. On the left bank of the river, in a picturesque position, lies

FACHINGEN.

This long known and much esteemed mineral spring rises close to the village of the same name; but notwithstanding the beauty of the environs—which equals that of Ems, while the valley is more airy and less hemmed in by steep hills—and the medicinal efficacy of the spring, there are no lodging-houses on the spot, the only building being the residence of the Verwalter, who superintends the bottling and packing of the water; so that those persons who are desirous of employing it at its source, are obliged to reside at Dietz, a small town a mile and half distant; though there is little doubt that if there were proper accommodation, the place would be resorted to. Around the house are avenues of poplar and lime trees, which by a little labour might be converted into an agreeable promenade.

The water taken into a glass is clear, sparkling, and emits small bubbles of carbonic acid. Its taste is agreeably cool and refreshing, piquant and alka-

line. Many prefer it as a summer beverage mixed with sugar or wine to Seltzer water, from which, however, its composition materially differs, inasmuch as a pint contains nearly a grain of iron, as much as 24 grains of bi-carbonate of soda, and 20 cubic inches of free carbonic acid, while there are only four grains of muriate of soda. Hence it stands foremost among the alkaline springs, none of those of Germany except Bilin containing so large a quantity of alkaline salt. In this respect it approaches very nearly to Vichy; the most frequented of the French Baths, from which, however, it differs in temperature, and in containing a larger quantity of iron. It also contains nearly twice as much gas as the Vichy springs, on which account, as also from its low temperature, it is much pleasanter to drink than even the Celestins at Vichy, which is the coolest spring (18° R.) and one of those most generally used for drinking.

The Fachingen water may, therefore, be considered applicable to many of the cases in which the Vichy springs would be recommended; though these latter are a great deal employed in the form of baths, are more solvent, and hence better calculated to procure the dispersion of swellings or *engorgement* of the abdominal viscera, as the liver, spleen, &c., while Fachingen having a more tonic property, and not being used for bathing, would be better adapted to rectify a faulty state of the mucous membrane of the alimentary canal,

with acidity, weak or painful digestion, ect. It is also well suited to the treatment of chronic bronchial and tracheal affections, asthma with copious expectoration, when there is not much constitutional irritability or tendency to inflammation, in which case a spring of a different nature, as Selters or Weilbach, would be preferable.

Several writers on mineral waters, as Thilenius, Ritter, Diel, Hufeland, etc. have spoken highly of the efficacy of the Fachingen water ; the last-named physician terms it " a powerful and highly efficient mineral water, in many cases unique in its way." And further says, " Its peculiarities consist in its richness in carbonate of soda, and carbonic acid, and their combination with a not inconsiderable quantity of iron; hence it is a solvent remedy without being astringent and constipating ; and is highly serviceable to many hypochondriacal patients, who labour under obstructions of the digestive organs, with debility and acidity ; a case which so frequently occurs, and in which neither the purely aperient nor strengthening chalybeate waters can be borne." Gouty people may also drink the Fachingen water habitually with advantage ; the good effects of alkalies in this disease being well known. It is more adapted to render service in the erratic gout in nervous individuals, than in that kind which occurs habitually at intervals, of a more fixed nature, and combined with deposition of chalky concretions in the joints ; in which case the

Wiesbaden baths would be more likely to relieve. These baths may sometimes be advantageously combined with the drinking of the Fachingen water, which may also be administered with benefit to children with enlarged glands, tumid abdomen, debility of digestion and of the muscular system, where a strong saline or a chalybeate spring would produce too much excitement.

But there is another class of cases in which the Fachingen water is calculated to be of geat service, viz. gravel and stone in the bladder. Some cases of stone, there is every reason to believe, might be altogether cured by mineral waters strongly impregnated with alkali and carbonic acid gas, if reliance may be placed upon the accounts received and the experiments made of the action of the Vichy water upon these foreign bodies, and of which the commission appointed by the Académie Royale de Médecine to investigate the subject, make a very favourable report. Dr. Petit of Vichy, by whom several of these cases are reported, observes—"What above all tended to the discontinuance of the employment of alkalis (in cases of stone) is, that they were formerly administered in a state of purity or only slightly carbonated, and were thus frequently very irritating and even dangerous; they could consequently only be given in too feeble doses to impart to the urine the degree of alkalinity necessary to produce the desired effect; but by their combination with carbonic acid they are rendered innocuous when perfectly saturated,

without losing any of their solvent property; hence they may be employed in much larger doses."

As in these cases, the principle of the treatment is to maintain the urine and secretions for some time in a state of alkalinity, the object would be materially facilitated by the baths of the water, which would obviate the necessity of taking such large doses internally, and I have little doubt that much more might be done by these means in cases of stone than has hitherto been supposed possible by the profession. I have stated in another work,* that one of the consequences most to be apprehended after the operation of lithrotity is, that fragments of calculi may escape detection, and occasion a recurrence of the disease; hence when there is reason to believe that the foreign body has not been entirely removed from the bladder, a course of alkaline waters, or of the alkaline bicarbonates, would be likely to procure its complete destruction. This plan of treatment might also be adopted as the most probable means of prevent- a return of the disease in cases where there exists a strong tendency to the formation of calculous concretions.

* On the comparative advantages of Lithotomy and Lithotrity, being the Essay to which the Jacksonian Prize of 1838 was adjudged.

SELTERS.

The spring of Nieder-Selters though not resorted to by invalids, supplies many parts of the globe with the highly agreeable beverage known by the name of Seltzer water, of which about a million and a half of bottles are annually used in the Duchy and exported to other countries. The water is also very efficacious in several diseases, and is used extensively upon the continent as a remedial means. It contains as much as 36 grains of saline substance to the pint, of which 16 are muriate, and 15 carbonate of soda; and 15 cubic inches of carbonic acid gas, with which it is intimately combined; in this respect it has the advantage over the Geilnau spring, which possesses a larger quantity of gas, but no muriate of soda and less of the carbonate. There is but a very minute portion of iron, and even this is precipitated in the bottled water, which is decomposed by the smallest quantity of vegetable substance, as a piece of straw getting into the bottle, sulphuretted hydrogen being thereby produced. It is easily digested, and seldom occasions congestion or determination of blood to particular organs, like the majority of strongly impregnated mineral waters, on which account it is often advantageously employed in some febrile and inflammatory affections. Its action is in general cooling, exhilarating and alterative,

improving vitiated secretions of the mucous membranes, giving tone to their glands, and promoting absorption. It may generally be taken without risk by robust and plethoric individuals, and is of great service in cases of torpor of the vascular and glandular systems; stomach derangement with acidity and constipation, tendency to gout in full habits; and scrofulous complaints. "But," says Hufeland, "it is in chronic diseases of the lungs, and especially in pulmonary phthisis, that the water is of the greatest efficacy. In this disease, when other powerful remedies produce no good effect, Seltzer water has often an extraordinary efficiency. Where there exists relaxation of the mucous membrane, by the exciting property peculiar to it, the energy of the relaxed vessels and mucous glands becomes re-established; in the tubercular kind it resolves obstructions without exciting inflammatory irritation; and where inflammatory complication exists, it regulates the abnormal secretion, and often prevents suppuration. I say all this after great experience, and could quote many cases of success. Seltzer water seems to contain the due admixture of principles required in this disease; viz., a slightly stimulating action, and the faculty of producing an increase in the power of the lungs and glands without causing determination of blood to them, or accelerating the circulation through the body. It produces the best effects in this disease when mixed with a third part of warm milk, especially asses' milk." Notwith-

standing this high eulogium, patients labouring under phthisis, and their friends, must not expect, when the disease is fully developed, that Seltzer water, any more than other remedies, can be productive of permanent benefit; though in the early stage its use may check the disposition of the formation of tubercle, and thus arrest the progress of the disease.

Vetter* speaks highly of the advantage of Seltzer water given in small and frequently repeated doses, after proper evacuations, in the fevers usually prevalent in summer, and complicated with erethism of the upper part of the alimentary canal, or what are commonly called gastric fevers, in which vomiting is so often a distressing symptom; though when acute inflammation is present it would not be advisable to give it without being diluted with water. I have had several opportunities of witnessing the beneficial effects of this water in cases of fever, and in diseases of the respiratory organs.

The Seltzer water would also be serviceable in many cases of irritation of the urinary organs, or tendency to the formation of stone or gravel, chronic inflammation of the mucous membrane of the bladder with ropy mucous secretion. It is frequently added to the Rhenish wines at dinner to destroy their acidity; and mixed with sugar forms a very refreshing drink in summer. When employed medicinally, a large quantity, as a bottle

* Op. Cit.

or two a day is requisite. The water is also serviceable as a wash for the mouth, in preserving the teeth.

WEILBACH.

This bath lies in an open country about half a mile from the village of the same name, on the high road from Mayence to Frankfort, and has been a good deal resorted to of late. Some years ago, persons using the waters were obliged to lodge in the village, where the accommodation was but indifferent: since that period, however a large bath and lodging-house has been erected at the spring, containing a saloon for dining and re-unions, about one hundred apartments, and commodious baths; the water being heated by a steam apparatus, by which its efficiency is not impaired, and which serves at the same time to warm the linen. The vapour is collected in a superior cabinet, and is used for vapour-baths. From the public garden adjoining the spring, a good view may be obtained of the mountains of the Taunus and Bergstrasse, their intervening plains, and the Rhine, with Mayence, and other towns. Wiesbaden, Soden, Kronthal, etc., are within a short distance of Wielbach.

The Weilbach water feels soft and unctuous to the touch, emits near the spring an odour of sulphuretted hydrogen, and has not an unpleasant taste. Its temperature is 15° Reaumur. It is exported to other parts of the duchy, and to the neighbouring large towns, though by exportation it loses somewhat of its properties. I have recommended it with advantage to patients under a course of Wiesbaden and Schlangenbad baths.

Germany scarcely contains any sulphurous springs of note, except those of Aix-la-Chapelle, Warmbrunn, and Baden, near Vienna; for though the cool springs of Weilbach, Nenndorf, and Eilsen, may be very useful in some cases, they cannot be compared with the others, which have a more energetic action, but approach nearer in their effects to the weaker warm springs of the Pyrenees, as St. Sauveur, the Eaux Bonnes, and Chaudes; or still more to those of Moffat, in the north of Britain, which the Weilbach water resembles in temperature, amount of saline and sulphurous impregnation.

A course of this water may then be considered applicable with great prospect of advantage in those cases where sulphurous waters are indicated, but where the more exciting ones would not be well borne, and is well adapted to delicate and irritable habits. When taken internally, it affects more especially the mucous membranes of the alimentary canal, air-passages, urinary and uterine apparatus, improving the secretions, without caus-

ing in most instances a sensible increase in their quantity, though in some cases the bowels or kidneys are slightly acted upon, and the sensible perspiration is increased; the latter especially, when bathing is combined with the internal use of the water, a miliary eruption being occasionally produced on the surface of the body. Hence the baths are calculated to procure the removal of some chronic skin diseases of the papular, pustular, or dry scaly varieties, of ulcers and other complaints of a syphilitic origin: though to many cases of this kind a more strongly impregnated water, as Aix-la-Chapelle, or a warm saline one, as Wiesbaden, would be better suited. The water may be also used with advantage in stomach and liver derangement, with the character of irritability and altered secretion; in uterine congestion, with dysmenorrhœa; in hemorrhoids from languid abdominal circulation, when not combined with a torpid state of the bowels; in enlarged glands of the neck and mesentery in delicate children; in gravel, and irritation of the urinary organs with catarrhus vesicæ, etc., though in some of the above-mentioned states, other mineral waters might be equally applicable or even preferable, which could only be decided by an inquiry into their individual peculiarities.

It is, however, in diseases of the lungs and air-passages that Weilbach enjoys a greater degree of reputation; more than one half of the patients who resort thither being affected with these

complaints; and I should consider, from what I know of its effects, and from its analogy with the Eaux Bonnes, which have an especial reputation for the cure of thoraic diseases, that the Weilbach water would render great service in many cases of bronchitis, laryngitis, and incipient tubercular consumption, as it allays irritability, facilitates expectoration, and might often be used when other springs would be too exciting; though many invalids have recourse to it as a last resource, and when the disease is too far advanced to admit hope of permanent relief. In some cases the water is drank mixed with milk. According to Dr. Creve, a pint of water contains $4\frac{1}{2}$ grains carbonate of soda; $2\frac{1}{8}$ carbonate of lime; $1\frac{1}{8}$ sulphate of soda; smaller portions of the muriates of soda and magnesia, with 9 cubic inches of sulphuretted hydrogen: and 4 of carbonic acid gas. M. Jung, however, states the quantity of gas in the pint to be $1\frac{3}{4}$ sulphuretted hydrogen and two cubic inches carbonic acid, which I should conceive to be the most correct, as, judging from the physical properties, there is no evidence of the former proportion of gas being contained in a pint of the water. Doctors Fabricius, Thilenius, Wetzlar, and others have spoken favourably of this spring. A cold water-cure establishment has been in operation here for some years.

SODEN

Is a village in the Duchy of Nassau, containing about 1000 inhabitants, and is situate in a beautiful part of the country, at the base of the Taunus hills, by which it is sheltered from the north and east winds. It is about two hours' drive from Homburg, a German mile distant from Kronthal, and is connected with Frankfort and Wiesbaden by railroad. The accommodations are tolerable at the Nassauer and Frankfurter Hofs, where tables d'hôte are established in the season. On account of the increased number of visitors several new lodging-houses have been erected within the last three or four years, and some of the springs which, had been previously neglected, have been enclosed and applied to medical purposes. The baths in the hotels are indifferent, but a new bath-house has been lately built. Among the objects of interest in the neighbourhood may be mentioned the Feldberg and Altkoenig, the highest of the Taunus hills, from whose summit a magnificent panorama of the Rhine and Maine countries, the Bergstrasse, etc. is displayed, with the ruins of Falkenstein, Koenigstein, Kronberg, etc.

The springs of Soden have been used from an early period for the extraction of salt, but have only been resorted to by invalids within the last ten or twelve years, though, from their efficacious nature

and great variety, there is little doubt that they will speedily rise into importance. They not only vary materially in the amount of salts and gas, as will be seen by the annexed table, but the different springs have temperatures, the range being, from 13° to 21° R. Some of them are exceedingly rich in muriate of soda. No. 1, or the Milchbrunnen, which is one of the springs chiefly employed for drinking, contains the smallest quantity of this salt (seventeen grs. to the pint); Nos. 2 and 4 are mostly used for baths. No. 6 approaches somewhat in composition to the Ragozzi, though it has more salt, and less iron and gas. The two new springs, 18 and 19, bubble and sparkle very much, being more rich in gas that the rest. These, with Nos. 1 and 7, are chiefly for internal use. Several thousand flasks are annually exported, and the water is not unfrequently drank at Wiesbaden during a course of bathing.

The action of the baths is exceedingly powerful and stimulating, somewhat causing determination of blood to the head or chest, on which account they should not be taken at a higher temperature than 25° R., and not unfrequently giving rise to an eruption on the skin. When drank, the primary action of the stronger springs, 6 and 7, is aperient or purgative, that of No. 1 is mostly diuretic. Compared with other springs of the same class, those of Soden are less energetic than the salt springs of Kissengen, which contain more muriate of soda and gas; and also the sulphate of soda, which is absent in the

Soden water. On the other hand, the Kreutznach springs, though containing more muriate of soda than the weaker Soden ones, have a small proportion of carbonic acid gas, on which account their action would be less powerful, were it not that the Mutterlauge or lees of the water is generally added to the baths. They are all, however, applicable to the same class of cases, though the difference in amount of the component parts of the Soden springs would enlarge the sphere of their applicability; as in cases where No. 6 or 7 would have too exciting an operation, No 1 or 3 might be employed with advantage.

The diseases which waters of this class are most likely to remove, are various kinds of scrofulous affections, particularly swellings of the mesenteric glands, or those of the neck, in indolent habits, with torpor of the digestive organs, and a deranged state of the secretions; obstinate rheumatic complaints of long standing; a cathetic or scorbutic condition of the system; relaxation of the mucous membrane of the air-passages, with cough and mucous expectoration, and some inveterate diseases of the skin, without inflammatory complication. Those cases of scrofula, combined with much constitutional irritability or tendency to inflammation, would be best treated by a course of the waters at Baden, Wiesbaden, or Ems. Dr. Stiebel, of Frankfort, has published a small work on Soden, in which Liebig's analysis of the two springs No. 18 and 19 is given.

KRONTHAL.

This beautiful and fertile valley is thickly planted with chesnut and other fruit trees, and is enclosed between gently rising hills, which join themselves on the north and east with the Taunus range. The bath lies at the foot of a hill on which stands the old town of Kronberg; the picturesque ruins of the castle, seen from a distance, form a striking object in the landscape; and though it has hitherto been principally resorted to by visitors from Frankfort and other places in this part of the country, yet, as its mineral springs may be ranked among the best of their class, there is little doubt that when the access is rendered more easy by improving the road between them and Soden, many persons will be induced to give them a trial, in preference to undertaking a long journey to more distant springs of an analogous character. Two large houses have been erected within these last few years for the better accommodation of the visitors, several of whom reside in the town, which is not more than half a mile distant. The Curhaus contains a large saloon, where the table d'hôte is held; some very commodious bathing cabinets, and about fifty neatly-furnished apartments. The resident physician, Dr. Kuster, has also a large house in which visitors can be lodged.

Two springs are chiefly used, the Trinkquelle or Stahlquelle, and the Wilhelms or Saltzquell,

enclosed in 1820. The temperature of the former is 11°, that of the latter 13°. The water tastes agreeably cool, acidulous, and chalybeate. Both springs contain a large quantity of gas, which forms bubbles on the surface, so as to resemble water in a state of ebullition. The Wilhelmsquelle contains more salts, but less iron and gas than the Trinkquelle, as will be seen on comparing the latest analyses of the two springs by Jung.

Judging from their composition, and from a comparison with other mineral springs, I consider that those of Kronthal may rank with the most valuable alterative and tonic waters of Germany. In the amount of muriate of soda the Trinkquelle approaches the Cannstadt spring, which, however, contains but a very minute proportion of iron. It contains about the same quantity of iron as the Ludwigsquelle, at Bocklet, from which it differs in having a few grains less muriate and sulphate of soda, on which account its action would be less aperient and more tonic. The astringent effect of the iron is in great measure neutralized by the large quantity of salts, which, predominating to a great extent in the Ragozzi and Pandur springs at Kissingen, renders their primary action purgative. On this account the Wilhelmsquelle would be more laxative than the Trinkquelle which also would be more so, and consequently in some cases better borne than a chalybeate water, containing but little salt, as Schwalbach; though where the object is to impregnate the system with iron, it would of course

be more speedily effected by the use of the latter. The sensible action of the Kronthal springs, however, seldom affect the bowels, but most usually the kidneys, though not so as to produce inconvenience. They are generally well borne, and after using them for a few days most patients feel themselves refreshed and invigorated. A course of these waters would be most applicable in cases where a tonic and at the same time a solvent effect is required, as in general debility, combined with nervous and vascular irritability, frequent palpitations, etc.; in weakness of stomach and bowels, with deficient or unhealthy secretions; relaxation of mucous membranes and of their capillary vessels, producing, when those of the air-passages are affected, cough, mucous expectoration, and passive bleeding from the surface; when the uterine system is implicated, too profuse periodical discharges, leucorrhœa, etc.; some nervous disorders, as hysterical and hypochondriacal affections, where a tonic medication is required, but where the direct chalybeates would prove too heating. Dr. Kuster has availed himself of the richness of the spings in carbonic acid, to erect a small building where baths and douches of this gas may be taken, and he speaks highly of their efficiency in cases where a powerfully stimulating effect is required, as in torpor of the system or of the functions of particular parts, some kinds of general and local paralysis, or defective power in the organs of sense.

MAYENCE.

Mayence is seven miles distant from Wiesbaden, the transit by railroad being made in twenty minutes to Cassel the fortified town on the right bank of the Rhine, connected with Mayence by a bridge of boats. Though belonging to the duchy of Hesse Darmstadt, this city is strongly garrisoned by the Austrians and Prussians, owing to its importance as a fortress of the confederation. It looks well from a distance, but possesses few interesting public edifices, except the cathedral, and onlv two or three good streets, the majority being narrow and irregularly built. A bronze statue of Guttenberg, the inventor of printing, stands in the market-place. A short distance from the town is a public garden, with a platform overlooking the Rhine, at the point where the Maine flows into it, and commanding a good view of Mayence, its bridge of boats, and part of the Rheingau, with the Taunus in the back-ground. The military bands of the garrison play here alternately every Friday during the summer, on which occasions many of the Wiesbaden visitors attend.

The population of Mayence, amounts to about 30,000, exclusive of the military. Steamers leave daily, up and down the river, to Mannheim and Strasburg, and to Coblentz, Cologne, and the parts beyond; a small steamer also plies between May-

ence and Frankfort. This mode would however be tedious, as the banks of the Maine present little to interest; and the last-named city can be reached by railroad from Cassel in an hour. Mayence offers no particular inducements for a permanent residence; the climate in winter is no better than that of other towns on the banks of the river.

The approach to Frankfort is indicated by numerous handsome country houses and gardens. The town itself, however, does not contain many objects calculated to interest the passing traveller. The usual promenade is on the site of the ancient fortifications and walls, now pleasantly laid out as a garden, with parterres of flowers and shrubs; a musical band being often in attendance in the summer. One of the houses, belonging to M. Bethmann, the banker, contains the "Ariadne," Dannecker's chef-d'œuvre. The Mainlust, a public garden, overlooking the river, is a chief place of resort on holydays. The public cemetery, a short distance from the town is worth visiting.

Frankfort possesses an extensive and well arranged museum of natural history, and a good theatre; some of its streets are wide and handsome, the houses and hotels palace-like, especially along the Zeil; (which would bear a comparison with the finest streets of Europe;) and the spacious quays. A stone bridge crosses the Maine, which is too shallow to admit of being navigated except by small craft. The population amounts to 55,000 inhabitants, of whom a fifth are said to be Jews.

Being the seat of the German Diet, there are representatives from all the great powers, and there is in winter a good deal of society among the members of the *corps diplomatique*, bankers, and merchants, which is said to be greatly tinctured with exclusiveness and the spirit of coterie. The Church of England service is performed by the chaplain attached to the British mission. The Casino is well supplied with periodicals, including the principal London papers; visitors can be introduced by a member, for a limited period. House-rent and living are more expensive than at other towns in this part of Germany. The air is pure, but the climate in winter is cold and raw, and high winds are not uncommon. On the whole, Frankfort would not be a bad place of residence for persons in health, but it would not be an advisable one for most invalids. There is railway communication all the way along the Rhine to Bâsle, and also to other parts of Germany, as may be seen on referring to the Guide and map.

A drive of nearly two hours is required to reach

HOMBURG

On the hill; belonging to the Landgrave of Hesse-Homburg, and lying near the base of the Feldberg, the highest mountain of the Taunus range. The houses are for the most part low and ordinary looking, nor is there any public edifice of

interest, except the residence of the Landgrave, with its lofty white circular tower, supposed to have been erected by the Romans, and which forms a conspicuous object from a considerable distance. The streets are clean, and the accommodations for visitors good. The population amounts to about 5,000 souls. Homburg has been a good deal resorted to of late years; its air is pure, clear, and bracing, the environs beautiful and varied; the garden of the castle is laid out in the English style, by the taste of the late Landgravine, who contributed greatly to render the place agreeable to strangers. There is also another public garden, with rows of chesnut trees and parterres of flowers, whence a good road, two miles long, bordered by avenues of lofty trees, extends to the lower hills, among which several shady paths have been made. New buildings have arisen for the accommodation of the increased number of visitors. There is a neat bathing establishment, containing seventeen cabinets for baths of mineral or of common water, as also a douche-cabinet and vapour-bath. The Cursaal is one of the first in Germany, the ball-room is tastily fitted up, the weekly ball, as also the reading-rooms, being free to the public; the object of the lessees being to attract visitors for the sake of play. Gaming is in full force at Homburg, and is continued throughout the winter, which circumstance has had great influence in increasing the number of visitors. The Cursaal garden is pret-

tily laid out, and from it a good view may be enjoyed.*

The springs rise in a meadow about half a mile from the town. The Elizabeth or Kurbrunnen is most used; the others are the Louisenquelle, Badequelle, and the Ludwigsquelle; all very rich in saline substance, of which the muriate of soda is the principal, and in carbonic acid gas. Indeed, Liebig, considers these springs more gaseous than others; though when seen in the well, the water does not bubble much, owing to the intimate mixture of the gas with it. The Kurbrunnen water is largely exported, and keeps long, but the exported water is less efficacious than that of the spring. The Badequelle contains the most salt, (one hundred and forty-three grains to the pint, of which one hundred and eight are muriate of soda,) and, as its name implies, is mostly used for baths, which have a very exciting action on the skin, and the system generally, not unfrequently producing eruptions. In plethoric individuals, or those liable to determination of blood towards particular organs, it is necessary to prescribe them them at a lower temperature than ordinary baths, and sometimes to dilute them with common water. They are mostly recommended in chronic eruptions of the skin

* In the lengthy advertisements setting forth the advantages of Homburg, sporting is held out as an inducement to remain the winter months, game being plentiful in the environs.

without tendency to inflammation; in chronic rheumatism, scrofulous affections, and in visceral *engorgement*, where the object is to determine the blood to the surface, and increase the activity of the functions of the skin.

Few of the visitors, however, use the baths; but the majority drink the Kurbrunnen, which has a temperature of from 8° to 9° R., a piquant, salt, and bitterish taste, rather unpleasant at first, but not disliked by those accustomed to it. The first effect experienced, on swallowing some of the water, is a sensation of warmth, and exhilaration: its action is solvent, laxative, or purgative, according to the constitution of the person, and the quantity taken; but owing to the gas and iron, its use is not followed by debility. When it does not affect the bowels, it generally acts upon the kidneys. This spring contains a much larger quantity of salts and more gas, but less iron, than the Ragozzi at Kissingen; hence its action is more decidedly aperient, though at the same time exciting. The large quantity of gas and iron singularly modifies the action of the water. Most waters which contain purgative salts, have little more iron and gas than serves for the proper mixture of the different ingredients, but in the Homburg water the gas has a distinct operation, and strongly excites the nervous and vascular systems. Persons, in general, after drinking for a few days, feel themselves lighter and and more cheerful; the appetite is increased, and acidity in the primæ viæ

removed. The stimulating action of the water on the alimentary canal and circulation, produces a corresponding increase in the activity of the absorbent system, and has a powerful effect in removing visceral or glandular obstructions.

Thus, it will be perceived, that the Homburg water is eminently calculated to be of great service in several disordered states of the alimentary canal, and associated viscera; especially deficient appetite, acidity, laborious or painful digestion, a torpid action of the liver and bowels, and the indigestion which affects those who have been accustomed to the use of ardent spirits, and is attended with heartburn, eructations, tendency to vomiting, and pyrosis; though in some of these cases, where a more tonic action is required, the Kissingen or Rippoldsau water be preferable. Dr. Muller speaks highly of its effects in the more severe forms of hypochondriasis and melancholy, accompanied with material derangement of the digestive apparatus, and a torpid state of the bowels;* as also in the removal of glandular enlargements, of a scrofulous nature: in cases where a stimulating and purgative operation is required; of chronic affections of the skin, connected with obstruction of the circulation of the liver, or disordered digestion. Dr. Prytherk, an English physician, who has resided some years at Homburg, has published a brochure on the waters.

* Erfahrungen über den Gebrauch und die Wirksamkeit der Heilquellen zu Homburg vor der Höhe.

Baden-Baden is now but a few hours distant (by rail) from Frankfort. The scenery along the Bergstrasse is interesting, and several places of importance lie along the line. The environs of Darmstadt abounds in gardens and pleasure-grounds. This town owes its existence to the residence of the Ducal court. Its general appearance is handsome but triste. Scarcely a shop is to be seen in the principal streets, which are spacious and well paved, crossing each other at right angles. The finest is the Rhein Strasse, leading from the central square, in which stands the palace, to the gate, beyond which a magnificent avenue is continued for more than two miles.

The country between Darmstadt and Heidelberg is beautiful and fertile, though, as in France, no country-houses or cottages are to be seen, the population being congregated in towns or villages. The peasantry in this part of Germany are poor and hard-working, but are for the most part strong and healthy. Women are very commonly seen working in the fields to a late hour in the evening. The general prevalence of great poverty was doubtless a principal reason of the success of the late revolutionary movements.

Mannheim, like Darmstadt and Carlsruhe, is a town of modern erection, being little more than a century old. It lies on the right bank of the Rhine, being connected with the opposite side by a bridge of boats, and has at first view rather an attractive appearance, the streets being wide, well

paved, and built in straight lines; the houses white and stuccoed, and there are three or four spacious squares. The palace is rather an imposing structure, enclosing a spacious court-yard, and contains a few good pictures. The gardens are extensive, laid out a l'Anglaise, and terminate in a long terrace overlooking the Rhine. A few English families took up their residence at Mannheim (if not driven away by the political disturbances). Living and house-rent are cheap, and there used to be an agreeable society in the winter. The theatre is tolerably good. The climate, however, in winter, like that of other towns immediately upon the river, is cold and damp; part of the environs are marshy, and intermittent fevers are not unfrequent.

Twenty minutes are required to reach Heidelberg. Half-way are the mosques, gardens, and fountains of Schweitzingen, constructed about the middle of last century. The environs of Heidelberg are beautiful, producing abundance of fruit and grain. The town stands on the left bank of the Neckar, at the foot of a chain of hills, extending up the valley, and is overlooked by the extensive and picturesque ruins of the castle, (built of the red sandstone with which the neighbourhood abounds,) formerly the residence of the Electors-Palatine, and one of the most interesting objects in Rhenish Germany. From the terrace a delightful prospect may be enjoyed of the valley of the Neckar, and the rich plain through which "Father Rhine" pursues his constant course.

The town is old, but cheerful-looking and clean, and is an agreeable place for a temporary sojourn in summer. The population amounts to about fifteen thousand, Catholics and Protestants, in about equal proportion, between whom religious differences do not excite feelings of asperity; both, in fact, use the same church for public worship. The university is but thinly attended; the present number of students does not exceed five hundred. Duels among themselves with the sword are of very frequent occurrence: a large proportion having their faces disfigured by scars. It is seldom, however, that any greater harm results from these duels, on account of the precautions by padding, etc., taken beforehand, and a surgeon is paid by the State to take care of the wounded.

Fine avenues of trees line the high road on approaching Carlsruhe, the southern outskirts being disposed as agreeable pleasure-grounds. This town, like Darmstadt, has been built little more than a century, and is entirely dependent upon the Ducal court. The streets are spacious and regularly built, the houses white and new-looking. The palace is a handsome edifice, occupying, with its dependencies, a semicircle of the principal Place, the area of which is planted with shrubs and trees, and whence the street diverges fanlike. The military are numerous; the number of inhabitants amounts to about sixteen thousand. Beggars are seldom seen in this or other towns along the Rhine. A few English families have taken up their re-

sidence at Carlsruhe, on account of the cheapness, and for purposes of education.

BADEN-BADEN.

In point of *agrémens* and resources for recreation during the summer season, Baden rivals, and in the opinion of many, surpasses Wiesbaden. It is little more than half the size, and the surrounding hills rise more steeply from the valley. Of these, the Mercuriusberg, and the hill on which stand the ruins of the old castle, by which the town is sheltered on the north and east, are the highest points, whence an extensive view may be obtained of the pine-covered mountains of the Black Forest on the one side, and the plains extending to the Rhine on the other. Among the other objects of interest in the environs, to which excursions are usually made, are the Jagd-Haus, the fine ruins of Ibourg, Eberstein, and the delightful valley of the Murg, to which an alpine-like road has lately been constructed across the intervening mountain. In fact, the whole surrounding country abounds in walks and rides among scenery of the highest order of picturesque beauty. There is, however, only one eligible carriage road, leading through the valley on the one side towards the Rhine, and on the other to the

convent of Lichtenthal, near two miles distant from Baden; a fine avenue of oaks extending the whole distance, and affording shade at all times of the day. The accommodations are of the best kind at Baden, and the mode of living much the same as at Wiesbaden. Within the last few seasons, several new houses have been erected, and two large and convenient hotels (d'Angleterre and de Russie.) Among the old hotels, the Badischer, Zähringer, and Darmstädter Hofs, enjoy the highest reputation, and are also bathing-houses; the bath cabinets being exceedingly well arranged and convenient. The Conversations-Haus, is fitted up with great taste and magnificence. As, however, since the closing of the Parisian gaming houses many objectionable characters resort to Baden, the society is less select than formerly. The new pump-room, where imported and manufactured waters, as well as that of Baden, are drank, is an elegant structure of recent erection.

During the last two seasons Baden has suffered perhaps more than any other bath from the political disturbances, soldiers having been quartered in the hotels at other times thronged with visitors. It offers no advantages for a permanent residence, beyond cheapness. Being distant from any town of importance, provisions are not very plentiful or varied, except during the season, and there are but few shops where many necessary articles could be obtained; the booths, which supply the place of shops, being closed as soon as the season is over.

Nor does it possess any advantage in point of climate beyond that of being sheltered from winds; from this cause, the valley is less perfectly ventilated, and the evaporation of the dew, which falls very heavily in the autumnal seasons, as well as of rain, is prevented by the trees on the promenades and about the hills.

Though the mineral springs of Baden have great analogy with those of Wiesbaden, as far as the nature of their constituent principles are concerned —both belonging to the class of thermal saline springs; yet as their temperature is much lower, while they scarcely contain any gas, and not more than half the amount of saline substance, they must be considered as much weaker, and less efficient in treatment of most diseases; consequently, the number of those who resort to Baden, exclusively for the purpose of using the waters, is comparatively small. One does not see crippled and infirm persons about the promenades, as at Wiesbaden; and the number of drinkers is extremely limited; whereas, at Wiesbaden, several hundreds drink the water every morning. On account of the less stimulating properties of the Baden baths, they may be used with less risk by persons in health, and many avail themselves of this privilege, though unpleasant symptoms are sometimes induced in particular habits, and slight eruptions on the skin are a not unfrequent consequence.

From the action of the Baden waters being less energetic than those of Wiesbaden, they may fre-

quently be applied with advantage in some of the diseases I have already enumerated, where the Wiesbaden water would be too exciting. Some rheumatic and paralytic cases in persons of nervous or highly excitable disposition, or where there is a tendency to inflammatory action, will be better treated by the Baden baths and douches, than by those of Wiesbaden. Neuralgic pains, accompanied with general irritability, a disordered condition of the skin, or of the alimentary canal, will also be frequently relieved by these baths; combined with the internal use of the water, or of cold springs of a more aperient nature. Thus, the artificial Carlsbad water is not unfrequently combined with the baths, when an aperient effect is required. Nervous affections of a convulsive nature, as hysteria, with congestion of internal organs and irregularity in the performance of periodical functions, will often be removed by a course of the baths, combined, or not, with some other mineral water, according as circumstances may seem to require it. The same may be said of dyspeptic complaints, attended with a vitiated state of secretions of the stomach and bowels, as indicated by acidity, heartburn, unusual distension of the stomach after eating. In some of these cases I have recommended, conjointly with the baths, the drinking of the Rippoldsau water, of which I shall have to speak presently, and of which large quantities are annually consumed at Baden. An irritable state of the skin, and some eruptions, as Lichen, Prurigo, etc.

which are frequently dependant upon a disordered condition of the digestive organs, will be mostly benefited by the above treatment. For some scrofulous patients the Baden waters would be advisable, as preparatory to a more tonic medication which frequently cannot be borne, unless it be preceded by remedies which have a more solvent action, and which are more effectual in stimulating the absorbent system, and in the reduction of glandular enlargements. Many patients with deranged general health, and hypochondriasis, will also be materially benefited by the Baden waters; especially, if they take an interest in the beautiful scenery of the environs, and in the amusements of the place.

It will be seen that considering the Baden springs as somewhat analogous to those of Wiesbaden, though much weaker in point of saline and gaseous substance, I have not thought it necessary to recapitulate all the disorders in which they might be applied with advantage. Though in general in the more long standing and intractable cases, Wiesbaden is infinitely preferable; yet certain peculiarities of diseased condition of parts, or of the patient's constitution, may render the Baden springs the more advisable of the two, especially in very delicate persons or those of nervous irritable temperament.

There is near Baden a chalybeate spring, to which is attached a bathing establishment, the water not being adapted for drinking.

RIPPOLDSAU.

This secluded bath, hitherto but little known to English travellers, lies in a pleasant valley, enclosed by steep hills, and separated from the Renchthal by the Kniebis mountain. which has an elevation of 3,000 feet above the level of the sea. It belongs to the Grand Duchy of Baden, and is about six German miles distant from Strasburg, and eight from Baden-Baden, with which there is communication during the season, by a public carriage, which passes through the beautiful Murgthal.* The village consists of about twenty houses, mostly occupied by labourers and woodcutters, and has a neat and cheerful appearance. From the bath-houses a promenade sheltered by avenues of lime trees, extends some distance along the bank of the rapidly rolling Wolfe, a tributary stream of the Rhine: among the lower hills several paths have been cut which enable the predestrian to ascend without fatigue, from the valley. Although from the position of Rippoldsau among the mountains, the weather is variable, yet the air is pure and bracing, and the inhabitants are for the most part long-lived. The great majority of the visitors is composed of the inhabitants of the Grand Duchy, the kingdom of Wurtemburg, of Strasburg, and the adjacent country. The exported water is, however, a good deal used among the visitors at

* The railroad which passes near the entrance of the Reuchthal has now facilitated the access to this bath.

Baden-Baden; I have in several instances recommended it to patients, under a course of the Baden baths. The bath house contains a public saloon for dining; neatly furnished rooms for lodging, with about thirty bathing cabinets, and a douche.

The principal spring (Josephsquelle) rises in a large square room, around which are galleries raised some feet above the pavement; the water is agreeably saline and piquant; its operation is cooling; mostly aperient, and at the same time tonic, the presence of iron being manifestly perceptible to the taste. It contains no muriate of soda, of which the Ragozzi possesses so large a quantity, but a not inconsiderable portion of the sulphate of soda and of carbonate of lime, and is very rich in carbonic acid gas, as will be seen in the analytical table. Its temperature is 8° R. The Leepoldsquelle and the Wenzelsquelle, which rise at a little distance from the Josephsquelle, contain less salts, iron, and gas. In the same building as the Leopoldsquelle, and close to the spring, a cabinet for carbonic acid gas baths and douches, has been constructed, with which the gas is directly conducted by means of leather pipes.

Kolreuter considers the Rippoldsau as one of the most efficient chalybeate waters, and I placed it in this class in my former work, though from the quantity of aperient salts, its operation is of a mixed nature, consequently it cannot be regarded as a directly chalybeate water, as Schwalbach or Spa. In composition it approaches nearest to the

Franzquelle at Franzensbad, to which Osann compares it. In the latter, however, there is a much larger proportion of saline constituents, especially of aperient salt, and less iron; it also contains muriate and carbonate of soda, which the Rippoldsau water does not possess, so that its action would be more solvent, and less tonic. In debility of the system generally, or of the digestive organs in particular, with inactivity of the liver and bowels, the Josephsquelle would in the majority of instances be highly efficacious, as also where a depurative action is required, from a vitiated state of the blood and secretions, as evidenced by a dry itchy state of the skin, with eruptions, especially about the face, as acne, etc. From its exciting action, and its effects on the mucous membranes, it is well calculated to relieve an obstructed state of the abdominal circulation, attended with sense of fulness in the region of the liver or spleen, piles, etc.; sympathetic bronchial affections with cough from derangement of the digestive organs; chlorosis, especially when connected with evident visceral congestion; glandular obstructions in individuals of a torpid habit, with weak digestive powers and a disposition to the formation of worms; nervous irritability, hypochondriasis, and hysteria, where a laxative and tonic operation is indicated, and where direct chalybeates would not be well borne: and in some cases of deficient or irregular menstruation. Baths may often be advantageously combined with the internal use of the water.

The Leopoldsquelle is more particularly recommended in chronic ailments arising from suppressed eruptions or discharges; long standing piles; gouty, rheumatic, and scrofulous affections, and where the Josephsquelle produces a too active operation. Both these springs, however, contain a large quantity of iron and gas, and are sometimes found to be too exciting, especially in states of plethora, nervous irritability, tendency to hemoptisis, &c. In such cases, where a more solvent than tonic effect is required, patients are generally recommended the Natroine, which is artificially prepared from the natural springs, by precipitating the greater part of the iron, and earthy salts, and by the addition of soda, so as to combine with the excess of carbonic acid gas. The Josephsquelle Natroine contains 20 grains bi-carbonate of soda; sulphate of soda; carbonate of lime 4 grains, one-third of a grain of iron, and 15 cubic inches carbonic acid gas to the pint. Its action is considered very analogous to that of the Kreutzbrunnen at Marienbad. The other or Schwefel-Natroine, is, in addition, impregnated with a portion of sulphuretted hydrogen gas. Its operation resembles that of the lighter sulphurous springs. The use of these preparations is sometimes made to precede that of the natural springs.

About seven leagues distant from Baden is

WILDBAD.

The drive between these baths across the mountain range, and the Murgthal offers a pleasing diversity of scenery. This bath is greatly improved of late years. Though the baths of Wildbad have been used for upwards of three centuries by the inhabitants of the neighbouring country, they were till lately very little resorted to by foreigners, and had never perhaps been mentioned in any English work, till the brief account which I gave of them in my former publication. From the high encomiums which were subsequently lavished on them by the author of the "Spas of Germany," the name has become familiar to English ears, and the place, during two or three seasons, overflowed with English visitors, several having been doomed to disappointment, in not finding the relief they sought, from their expectations having been too highly raised, or the water not being adapted to their case. Wildbad offers no inducement for persons not requiring its baths, to select it as a temporary residence, being for the most part a poor-looking little town, or rather village, placed in one of the most sombre valleys of the Black Forest, enclosed by steep pine covered

mountains, and at a considerable distance from any town of importance; Carlsruhe being nine leagues off, and Baden-Baden seven, across the mountains. At one extremity of the street of which the town consists, is an open space, or square, containing the two hotels, the bath buildings, and public room, supported by a colonnade. The place, however, is greatly improved since my first visit; new houses been built, and the accommodations improved; a Cursaal has also arisen, with a dining-room capable of receiving 150 persons at the table d'hôte, which forms the frontispiece of a rather voluminous work, translated into English, in which the great advantages of Wildbad and the powers of its waters are detailed at length, and duly insisted upon. The rapidly rolling rivulet Ens flows behind the town; the only carriage road through the valley being constructed on its banks, which, beyond the baths, are planted with trees, for near a mile, forming the public promenade. A principal excursion is up the valley, to the village of Kalmbach; there are also some shaded paths in the mountains for pedestrians or donkey riders. There are, however, few watering places that do not surpass Wildbad in this respect, or in objects of interest in the environs; and Dr. Granville must indeed have seen the place with a favourable eye, when he considers its sombre and triste position superior to the beautiful and *riant* valley of Schlangenbad, and the fruitful country in its neighbourhood. Wetzler

states that, during the greater part of the year, the climate is raw and cold; snow not unfrequently remaining in the neighbouring mountains till the middle of May, whilst from the deficiency of free ventilation, to which narrow valleys between wood-covered mountains are subject, the atmosphere must be considerably charged with moisture for some time after the falling of rain or heavy dew.

The water rises through a layer of sand to a height of from two to three feet into basins or piscinæ, in which several persons bathe at the same time. The Herrenbad, contained in a vaulted Gothic-like chamber, is the largest and warmest of the springs. At one extremity is a niche of a semicircular form, above the water, which is termed *Hölle*, the temperature being higher here than elsewhere. A part of the piscina is boarded off, so as to form isolated baths. The other baths, the Fürstenbad, the Frauenbad and the Gemeine-Männerbad for different classes of bathers, are considerably smaller. A spring has also been used for drinking, within the last two or three years.*

The temperature of the different springs is from 27° to 30° R., being the best adapted for bathing. Their chemical composition is the same, the amount of saline and gaseous substance being exceedingly small; the solid residuum, after an analysis of a pint of the water, scarcely exceeding three grains, so that the medicinal properties of the water may be considered as principally depend-

* The private baths have been latterly improved.

ing upon its temperature, in which it differs from most of the other German waters, which require to be either warmed, or cooled down to the proper degree of heat for bathing. At several of the French baths, however, where the water has great analogy with that of Wildbad, as Luxeuil, Plombières, Neris, etc., it is also used at the natural temperature, though, as the springs are more numerous at these places, and the range of temperature more extensive, they can be better made to fulfil the different indications of diseased states. Thus, at the two first-mentioned places, cases which are unrelieved by baths at from 27° to 29° degrees, are not unfrequently greatly benefited by the use of one of the hotter springs, or by the vapour, which is in great abundance in the *étuves;* whereas several of these patients would probably have to return from Wildbad no better than they came.

Waters of this kind are tasteless, feel soft and unctuous to the touch, are exceedingly agreeable and refreshing as baths, producing generally a tranquillising and sedative effect upon the nervous system; hence they are highly serviceable in most of those cases, where a high degree of irritability exists, which would render the employment of more exciting springs unsuitable.

Of this nature are some gouty, and particularly rheumatic and paralytic cases, occurring in youug or middle-aged persons; or in those of a nervous temperament, and unable to bear the action of a

powerfully stimulating water.* In local paralysis arising from accidents, or from diminished nervous energy of the spinal marrow, or of particular nerves, they are also calculated to be of service; though, in the majority of instances, a more strongly mineralised spring would be more likely to be productive of benefit, and in a shorter space of time. Certain cases, however, now and then occur which appear to indicate the use of a strong saline, or sulphurous water; but which are not benefited by it, and are relieved by the employment of one of the simple thermal springs. The same may be said of neuralgic pains or *tic* in various parts, without our being able to offer any other explanation of the circumstance in the present state of our knowledge, than that of the peculiar idiosyncrasies of individuals; as is frequently seen in the practice of medicine, that remedies which are generally efficacious in certain diseases, are occasionally powerless, though the patient be to all appearance under similar circumstances as others who have been benefited by these remedies.

In several nervous complaints, and convulsive affections of an hysterical nature, with irregular distribution of blood to particular organs, occurring

* The cases adduced in the work of Dr. Heim, (Wildbad et ses Eaux Minerales,) in proof of the efficiency of these waters, are almost all in youngish persons or those of a nervous temperament, which corroborates my opinion, as expressed in the former edition, before I had read the above-mentioned work.

in delicate females, or those possessed of a high degree of susceptibility, a course of baths of this kind would be likely to be attended with considerable advantage, both from the tranquillising effects, and by their restoring the equilibrium of the circulation and the nervous energy between different parts. Those painful affections depending upon morbid sensibility, and often connected with irregular muscular action, which I have described in my work on nervous disorders, and some of those paralyses of a purely functional nature, which I have attributed to a debility of volition, occurring for the most part in young females, would also be very likely to be relieved, by the Wildbad or Schlangenbad baths, combined with, or succeeded by, the internal use of tonic remedies, if the patient's condition allowed of their employment. Waters of this class would also be applicable with advantage in some dyspeptic cases, with the character of irritation, and attended with painful digestion, or cramp; and in those cutaneous affections marked by increased vascularity and irritability of the skin, as some papular eruptions: Lichen, Prurigo, etc. The pains from old wounds are often relieved by these baths. Many of those who go through a course of baths, experience a degree of feverish irritation, which subsides on the baths being discontinued a few days, and is regarded by the physicians as an advantageous circumstance and preliminary to a cure, though attended with discomfort, and increase of former pains at the time.

This bath-fever, however, does not so frequently occur as at a more strongly impregnated spring, as Wiesbaden or Carlsbad.

Stutgard, the capital of Wurtemburg, is about four hours' drive from Wildbad, and is connected by railroad with Carlsruhe. It contains about 30,000 inhabitants, and is pleasantly situate in a valley surrounded by hills on which the vine is cultivated. It looks well from a distance, the numerous white villas stattered about the environs imparting a cheerful aspect. There is, however, little to interest the passing traveller, and no inducement for a protracted sojourn. The palace is surmounted by an enormous crown, which most English would consider to be bad taste. The interior is tastily but not gaudily furnished. Since its construction, the old palace in the centre of the square has been appropriated to Government offices. The palace gardens are extensive, prettily laid out à l'Anglaise, and are open to the public. They terminate at Rosenstein, the summer residence of the King, two miles distant, and commanding a good view of the town, as well as of the course of the Neckar. In the neighbourhood of Stutgard are the chalybeate springs of Cannstadt, which, though very efficient, are not resorted to by English visitors; and as they do not equal in point of reputation those of the same class already specified, and where the accommodations are superior, I think it unnecessary to enter into any detailed account of them, or of Griesbach, Petersthal, or other smaller baths

along the course of the Rhine, being desirous of circumscribing the limits of this work as much as is consistent with my object, viz., the diffusion of condensed information of a practical nature respecting the most important mineral springs.

APPENDIX.

SCALE OF TEMPERATURE.

	Centesimal.	Reaumur.	Fahrenheit.
Freezing . . .	0	0	32
Lowest bath temp. .	5	4	41
Lowest temp. of sea .	10	8	50
	15	12	59
	20	16	69
	25	20	77
	30	24	86
	35	28	95
Highest bath temp. .	40	32	104
Baths at Mont D'Or .	45	36	113
Temp. of Russian vapour baths .	50	40	122
Boiling . . .	100	80	212

TABLES OF ANALYSIS.

CONTENTS OF A PINT OF WATER.

AIX-LA-CHAPELLE.

(*The Source de l' Empereur, according to Monheim.*)

	Grains.
Sulphur	0·620
Muriate of soda	20·716
Sulphate of soda	2·121
Carbonate of soda	6·610
Phosphate of soda	0·140
Animal substance	0·294
Silex	0·540
Fluate of lime	0·479
Carbonate of lime	0·232
Carbonate of magnesia	0·152
Carbonate of strontian	0·043
	31·953

	Cubic Inches.	
Carbonic acid gas	$8\frac{4}{8}$	according to
Sulphuretted hydrogen gas	$13\frac{1}{2}$	Kortüm.

WIESBADEN.

(*The Kochbrunnen, analysed by Kastner.*)

	Grains.
Muriate of soda	44·225
Sulphate of soda	0·700
Muriate of lime	5·480
Sulphate of lime	0·420
Carbonate of lime	1·650
Muriate of magnesia	0·790
Carbonate of magnesia	0·700
Extractive matter	1·750
Iron	0·078
Muriate of potass	1·200
Fluate of magnesia	1·600
	57·593

Carbonic acid gas, 7·166 inches.

SPA.

	Pouhon.	Geronstère.
Carbonate of lime	9·87	5·20
Carbonate of soda	2·25	1·43
Oxide of Iron	5·24	0·94
Muriate of soda	1·16	0·64
Silex	2·26	1·40
Grains	26·8	12·50
Carbonic acid, cubic inches	20·2	16·8

Minute portion of sulphate of soda, alumina, etc.

SCHWALBACH.

(*According to Kastner.*)

	WEIN-BRUNNEN. Grains.	STAHL-BRUNNEN. Grains.	PAULINEN-BRUNNEN. Grains.
Carbonate of magnesia	3·125	6·88	2·750
Carbonate of lime	2·110	1·4	2·955
Carbonate of soda	0·88	0·250	0·450
Muriate of soda	0·175	0·340	0·450
Sulphate of soda	0·160	0·21	0·025
Oxide of iron	0·833	0·75	0·95
Carbonic acid gas	26·60	28·10	39·8 cub. in.

EMS.

(*According to Jung's Analysis.*)

	KESSELBRUNNEN. Temperature 115 F. Grains.	KRANCHENBRUNNEN. Temperature 90 F. Grains.
Carbonate of soda	14·7418	12·6108
Muriate of soda	7·0210	6·3349
Carbonate of lime	1·1474	1·4400
Carbonate of magnesia	0·3200	0·4975
Muriate of magnesia	0·3318	0·3758
Sulphate of soda	0·3538	0·3981
Oxide of iron	0·0594	0·0095
Silex	0·3684	0·3842

Carbonic acid gas, 12 913.—20·340 cubic inches.

BADEN-BADEN.

The Ursprung, according to Kastner.

Muriate of soda	17·500
Muriate of lime	1·500
Muriate of magnesia	0·500
Sulphate of lime	2·750
Carbonate of iron	0·111
	22·361

Carbonic acid gas in small proportion.

KREUTZNACH.

Analysed by Osann.

Iodate of soda	0·0440
Bromate of lime	6·6025
Muriate of magnesia	1·3672
Muriate of soda	59·6651
Muriate of magnesia	0·6786
Muriate of lime	2·5612
Muriate of potass	0.4017
Muriate of lithia	0·0566
Muriate of alumina	0·4321
Muriate of manganese	0·6538
Carbonate of lime	0·6133
Carbonate of magnesia	0·4730
Carbonate of iron	0·3645
Silex	0·0313
Resinous matter	1·4717
Grains	75·5220
Carbonic acid gas	3·98
Azote and oxygen	93
Cubic inches	4·91

HOMBURG.

(*The Kurbrunnen, according to Liebig.*)

Muriate of soda	79·1548
Sulphate of soda	0·3815
Muriate of lime	7·7590
Muriate of magnesia	7·7919
Silex	0·3158
Carbonate of lime	10·9905
Carbonate of magnesia	2·0136
Oxide of iron	0·4623
	108·8815 grains.
Carbonic acid gas	48·64 inches.

SELTERS.

(*According to Kastner.*)

	Grains.
Muriate of soda	17·2285
Carbonate of soda	6·1575
Carbonate of lime	1·8573
Carbonate of magnesia	1·6875
Sulphate of soda	0·2615
Phosphate of soda	0·2775
Oxide of iron	0.0785
Silex	0·1500
Carbonic acid gas	28·48 cubic inches.

RIPPOLDSAU.

(*According to Kolreuter.*)

	Grains.
Carbonate of lime	9·48
Carbonate of iron	0·76
Oxide of manganese	0·57
Sulphate of soda	15·60
With minute portions of sulphate of lime, magnesia, silez, &c.	
Carbonic acid gas	32·40 cubic inches.

SODEN.

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Muriate of soda - -	17,687	40,611	25,589	109,909	51,939	91,448
Muriate of potash -	0,168	0,407	0,238	1,075	0,506	0,844
Carbonate of lime -	2,739	5,068	3,862	6,397	3,770	7,549
Carbonate of magnesia	1,374	3,847	1,843	1,359	0,683	1,052
Sulphate of lime - -	0,199	03,22	0,268	0,653	0,207	0,586
Carbonate of iron - -	0,161	0,253	0,199	0,215	0,153	0,322
Silex - - - - -	3,168	0,629	0,153	0,184	0,138	0,192
Argillaceous earth -	0,017	0,029	0,023	0,026	0,020	0,036
Grains - - - - -	22,665	51,171	32,279	119,843	57,328	105,003
Carbonic acid gas, cubic inches - - - -	13,624	18,569	14,929	5,783	15,185	14,016
Temperature (Reaumur)	19°	16°	18°	17°	12°	16°

No. 7 is very analogous in composition to No. 6.

The table is taken from the work of Dr. Schweinsberg, "Soden und seine Heilquellen." Gotha, 1831.

MR. LEE'S WORKS.

WITH

OPINIONS OF THE PRESS. *

MEDICAL AND SURGICAL WORKS.

OBSERVATIONS ON THE PRINCIPAL MEDICAL INSTITUTIONS AND PRACTICE OF FRANCE, ITALY, AND GERMANY; with Illustrative Cases, &c., and a Parallel View of English and Foreign Medicine and Surgery. 2nd edition, enlarged.

"Mr. Lee's work deserves particular attention; it is written with more independence and justice than are usually met with. His comparative observations are almost always just, and do as much honour to his knowledge as to his judgment."—*Revue Medico-Chirurgical.*

"This is a very useful volume, and contains much valuable information."—*Dublin Journal of Medical Science.*

"Of the highest value, combining as it does, so much of the *utile* with the *dulce*, so many facts with so concise a manner of announcing them. We cordially recommend it to the profession."—*London Medical and Surgical Journal.*

"The account is so sketchy and animated, that the chief fault to be found with it perhaps is, that it does not present us with details more copious."—*Medical Gazette.*

NOTICES OF THE SECOND EDITION.

"A work of great utility: it is so much an elegant record of facts carefully observed, and of opinions judiciously formed, that the duty of the impartial critic is limited to praise and quotation."—*Medical Times.*

"A very complete exposition of the medical institutions of the three nations. The author is well known to most of our readers from the numerous publications with which he has enriched science. His profound and at the same time varied knowledge, his frequent visits to different parts of the continent, and the protracted residence which he has made in many of them, impart to most of his judgments a justness of appreciation, and a character of truthfulness rarely met with.'—*Gazette Médicale de Paris.*

"The principal points (especially as respects the Paris hospitals) are described with great accuracy. In the parallel between English and foreign medicine the impartial appreciation and the sound judgment displayed reflect great honour upon the author."—*Schmidt's Jahrbucher der Medicin.*

COUP D'ŒIL sur les HOPITAUX DE LONDRES, et sur l'Etat Actuel de la Médicine et de la Chirurgie on Angleterre. (Pamphlet.)

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* These notices are considerably curtailed. Many other highly favorable ones from metropolitan Journals, and all those which appeared in the provincial papers, are omitted, not from any disregard, but in order not to lengthen out the present list.

A TREATISE ON SOME NERVOUS DISORDERS.

Second Edition.

NOTICES OF THE LAST EDITION.

"Mr. Lee has written a book which possesses an uncommonly high degree of practical worth. He has the merit of having by his researches placed in a clearer light several complaints which till now had not been very minutely studied. His remarks on Hysteria, Epilepsy, and Hypochondriasis, are in general excellent, and contain much that is new, especially in a practical point of view; and even if it be not all gold which he gives us, yet has he emphatically directed the attention of practitioners to one point which, with further labour, will certainly lead to great results not yet dreamed of, and which at all events merit a closer investigation at the present time."—*Schmidt's Jahrbücher der gesammten Medicin.*

"The method of treatment is founded upon rational and comprehensive indications. Several cases are added, corroborative of the author's statements, and terminate this interesting treatise."—*Medicinische Zeitung.*

"This part of his work, which Mr. Lee has devoted to their consideration, appears to us to be the most complete treatise existing on the subject."—*Gazette Médicale.*

"Mr. Lee's work is of a practical nature, and worthy of attention."—*Medico-Chirurgical Review.*

"This is a second edition of a work which deserves attentive consideration from all professional men. It is well written, its statements are clear, and it exhibits an intimate acquaintance with the whole bearings of the inquiry."—*Atlas.*

"Mr. Lee has presented us with a very useful and clever treatise in the volume under notice. He is evidently well acquainted with his subject."—*Monthly Magazine.*

"A second edition of a valuable treatise, in which those nervous affections which simulate structural disease are treated of with skill and ability."—*Literary Gazette.*

THE JACKSONIAN PRIZE ESSAY, on the Comparative Advantages of Lithotomy and Lithotrity, and on the circumstances under which one method should be preferred to the other.

"An excellent manual of all the facts relating to lithority."—*Dublin Journal of Medical Science.*

"The subject is discussed with temper and judgment, and the various conditions under which the operations are respectively proper or contra-indicated are adduced in a lucid and forcible manner."—*Medical Times.*

"We cannot conclude our remarks without congratulating the author upon having obtained the prize in so worthy a manner."—*Hamburgh Medical Journal.*

TWO LECTURES on LITHORITY and the BILATERAL OPERATION, publicly delivered in London, Birmingham, Bath, and Bristol; to which is appended a Translation of M. Chevalier's Essay on the Dissolution of Stone in the Bladder. Reprinted from the London Medical Gazette.

ON STAMMERING AND SQUINTING, AND THE METHODS FOR THEIR REMOVAL.

"An excellent treatise on Stammering and Squinting."—*Graefe and Walthers Journal für Chirurgie.*

"We can recommend the work as by much the completest and best published on the subject in this country."—*British and Foreign Medical Review.*

MINERAL WATERS

HYDROPATHY AND HOMŒOPATHY.

PRACTICAL OBSERVATIONS ON MINERAL WATERS AND BATHS, with Remarks on Bathing, and on Artificial Mineral Waters.

"We can especially recommend the present production. Mr. Lee's remarks and limitations as to the utility of mineral waters, are very discriminate and just."—*Med. Chir. Review.*

"A good epitome on the subject of mineral waters and free from the cant about the infallibility of particular springs."—*Athenæum.*

"The book contains a considerable amount of useful practical information on the subject of which it treats."—*Foreign Quarterly Review.*

"Able, just, and intelligent."—*Atlas.*

THE BATHS OF GERMANY CONSIDERED WITH reference to their Remedial Efficacy in CHRONIC DISEASE: with notices of the chief French and Swiss Baths. 2nd edition, enlarged.

"Marked by good sense, reflection, and an acquaintance with the action of the waters."—*British and Foreign Medical Review.*

"The judgment which Mr. Lee expresses regarding the properties of these waters are enlightened, and exhibit no traces of that exaggeration which is so frequently seen in works written by the resident physicians at baths. On this account it is the best work which we can recommend to those who are desirous of being acquainted with the properties of these baths, and with other circumstances which interest bathers."—*Gazette Medicale de Paris.*

"The account embraces every point of practical interest or importance connected with the subject. We consider Mr. Lee's work an extremely useful publication. Its general accuracy on all important details, and its conciseness, recommend it strongly to the notice of the public, and especially of the medical profession."—*Dublin Journal of Medical Science.*

"None other than a favourable judgment can be given upon this book, which must be ranked among the best handbooks on the subject: even of those published in the German language."—*German Medical Review.*

"Complete and comprehensive. The reader finds much useful information as to the mode of using the waters, and observations on the forms of disease in which they are calculated to be most beneficial."—*Edinburgh Medical and Surgical Journal.*

"This work is from the pen of the talented and indefatigable gentleman who, by his various and valuable publications, has laid the medical profession and the world at large under peculiar obligations to him. We can cordially recommend this volume, for, in our judgment, it is the best practical work on mineral waters in the English language."—*Atlas.*

"Mr. Lee's production deserves the popularity it has attained. A work so clear, so circumstantial, so free from technical terms or pedantic abstruseness, is worthy of the praise that has been so generally bestowed upon it."—*Sunday Times.*

"From the few publications of Mr. Lee that have fallen under our notice, he appears to possess considerable medical knowledge; and what is of quite as much importance, great common sense, and a rational judgment. To point out the different disorders to which the German baths are *generally* adapted, and to offer a variety of hints to guide the patient and his medical attendant, as well as to suggest the best mode of using the waters, is the object of this work."—*Spectator.*

"An interesting work."—*Augsburg Gaz.*

"To explain which (the properties of the waters) Mr. Lee sets himself, with scientific and professional accuracy, in this certainly very satisfactory volume."—*Literary Gaz.*

"The Principal Baths of Germany, by Mr. Lee, the author of several works distinguished by the scientific knowledge they display, but perhaps still more for the comprehensiveness of his views, explained with singular brevity and perspicuity, and the soundness of his judgment, as well as the force of his logic."—*Monthly Review.*

"This volume is evidently the result of much study, and exhibits much natural acuteness, and considerable scientific knowledge."—*Britannia.*

"A sound practical work on the mineral waters of the continent."—*Naval and Military Gaz.*

THE BATHS AND WATERING PLACES OF ENGLAND. Second Edition.

"This work recommends itself by the spirit of independence in which it is written, by the justness of its therapeutical points of view, and also by the important information which appears in every page."—*Gazette Médicale.*

"A very useful companion to those who resort to the English watering-places, giving a concise and very fair account of these sanitary resorts. The remarks on the employment of mineral waters are well worthy of perusal."—*Medical Gazette.*

"Mr. Lee's *Coup D'Œil* of British watering-places is that of a master. Everything unimportant in his subject escapes notice, while everything which is of value to the invalid or medical man he seizes with intuitive sagacity, and places before his readers with a precision and concise elegance which makes his little book a treat, even to the fastidious scholar."—*Medical Times.*

"A commodious, as it appears to us, a complete handbook for the knowledge of the mineral springs of England."—*German Medical Review.*

"The medical remarks are judicious, and the descriptions concise and accurate."—*Morning Chronicle.*

"Contains a large amount of information in a concise form. The Author's accounts of the localities, with which we ourselves are well acquainted, are very accurate and characteristic."—*British and Foreign Med. Chir. Review.*

"The present work, like others written by Mr. Lee, is characterized by moderation and good sense. The springs are ably treated of."—*Douglas Jerrold's Paper.*

"A capital little manual. The Author possesses the invaluable art of being interesting at the same time that he is scientific."—*New Monthly Magazine.*

HYDROPATHY AND HOMŒOPATHY, impartially appreciated. With Notes, illustrative of the Influence of the Mind on the Body. Third Edition.

"Mr. Lee's opinions respecting the dogmas in question are generally just, and he gives a very fair and impartial outline of their leading features, pointing out erroneous hypotheses and distorted facts wherever found."—*Lancet.*

"The profession in this country was indebted to Mr. Lee for the first sketches which appeared of Hydropathy and Homœopathy. The author has been enabled, by placing two such opposite methods of treating disease in juxtaposition, and exposing their fallacies, to do good service to the cause of legitimate medicine."—*Dublin Medical Press.*

"These essays have been recognised as sensible and moderate expositions of the slender merits which attach to the popular charlatanisms of hydropathy and homœopathy."—*Medical Gazette.*

"The Author is the first who made these systems known to his countrymen. In his appreciation of water as a remedial means, without depreciating its becoming power, he nevertheless exposes the harm attending the excessive and one-sided use of the water practice. In the second part he controverts the theories of Hahnemann, and justly observes that one advantage of homœopathy in England is that the excessive administration of drugs has been thereby circumscribed."—*Schmidt's Jahrbücher der Medicin.*

"The candour and moderation displayed in the book amply justified the encomiums passed upon it by the press generally."—*Westminister and Foreign Quarterly Review.*

"The question to what extent water is available in the treatment of disease is very fairly answered by Mr. Lee, whose work appears to be a judicious estimate of the real merits of the water cure. With equal correctness has he appreciated in our opinion the homœopathic theory. The book is exceedingly calculated to disabuse the mind of that portion of the public which may have been deluded by the imposture termed homœopathy."—*Douglas Jerrold's Weekly Newspaper.*

"We admire the cautious and temperate style in which Mr. Lee treated the subject. His views are sober and rational."—*Atlas.*

"The remarks are characterized by moderation and good sense."—*Spectator.*

"Its perusal will well repay those who are thinking of placing themselves under the water doctors."—*Athenæum.*

CONTINENTAL LOCALITIES, CLIMATES,

AND

MEDICAL ORGANIZATION.

THE CONTINENTAL TRAVELLER AND INVALID'S HANDBOOK, with Remarks on the Influence of Climate, the remedial Advantages of Travelling, &c. An enlarged Edition, of "Memoranda on France, Italy, and Germany," upon which the following were among the notices of the press.

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"This is a very superior book; full of information elegantly communicated."—*Monthly Magazine.*

"Mr. Lee's book contains a good deal both of amusement and information."—*Medico-Chirurgical Review.*

"Mr. Lee is a high and well-known authority on the subjects indicated of a medical character, and this volume will be found to be a valuable manual in the respects mentioned."—*Monthly Review.*

"Invalids who seek health in such resorts would do well to consult it."—*Literary Gazette.*

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